The Builder.

SATURDAY, MARCH 10, 1855.

THE practical process of decorative painting, the character of *design* frequently entering into the embellishment of important public and private edifices, and the opportunities for professional influence—alike towards the general use of decoration, and the recognition of a higher standard of art,—none of these are, yet, quite what they should be, even with regard to the general state of architecture and professional practice. It may have been imputed to architects, lately, and with some degree of truth, that little attention, comparatively, is given by them to branches of art referred to. Their mistake, such as it is, has been of some standing; and at length, a distinct class of "decorators" has grown up,—some of the number possessing qualifications of higher order than would have been met with a few years back. Indeed, we could name one or two individuals entirely deserving to be ranked as artists, and whose works might, therefore, be examined by any of us with advantage. Still there are points of view in which this modern distinction of professions and objects deserves attention, more than it has received. A principle of action may be right or wrong, but it should be accurately designated, and either fully received or actively combatted.

The object of the present article being mainly to place before our readers, some particulars which we think may become useful in practical house-painting, we would now merely get rid of some of those points of discussion which strike us at the threshold of any subject connected with decoration. Everything relative to interiors of houses, as regards design, forms really one chief department of our art, and should be made to take part with the development of art, now progressing through the ordinary practice of architects. What, then, are the anomalies which exist, and the changes in practice which otherwise need consideration?

If the particular nature of the profession of architect, as understood, be a thing to be adhered to, as asserted, it would certainly call for *observation*, that in the ordinary practice of decorative works, the vocations of the designer and executor are sought to be united. Either the principle acted upon by the Institute is wrong, or will not work in certain cases, or it might be expected to be capable of general application. At all events, the public regularly demand, in regard to decoration, from individuals, what compels the union of offices which architects hold to be distinct; and even more regularly as a set practice than they demand in similar manner from the builder. The question then presented seems to be,—Are the public necessarily to supply their wants referred to, without the assistance of architects? Is it for their pecuniary interest, and for the interests of art, that they should do so, or can the same hand which usefully governs the structural disposition, direct the decoration and furnishing, with advantage as to higher character of art, to ultimate durability, and immediate saving? Plainly, is the architect to continue to resign half his work? or is it for the public advantage that those who maintain now a professional *status*, should use their abilities only by becoming contractors?

It should, when inquired into, be obvious that it is an erroneous position for one to be in, to have the design of the plan and of the outside of a building, and to be generally warned off from the interior; for, even where the architect is disposed to attempt that for which we say he would be best qualified, but for which some say he is unfitted—the fancy which people have, that the paying for a thing gives the right to indulge "a taste," counteracts all his aims and undertakings. A trading class of decorators is naturally more subservient, and *art* suffers.

Interior decoration is neglected as a study, simply because in the present state of taste, the knowledge would seldom do much for the architect, either in reputation or in another way. The position of the department of architecture referred to, however, is, that whatever it may *not* lose by supposed inability of individuals, the general art loses much, and the subordinate branch the very elements of all good art, which the training of one whose ideas are ever grounded on structure could best supply.

To maintain his position, the architect must be not only familiar with the nature of all the practical processes of decorative art, but he must have the insight into their scientific principles which the workman does not possess. He will then be able, from time to time, to suggest better as well as cheaper means of attaining results, than many of those which prejudice or ignorance now employs.

One reason why it seems to us the required attention from the designers of buildings, to their decoration, can hardly yet be anticipated, is that the decorative processes do not allow to be realized, durability and monumental character.

Till there is some more decided change in the atmosphere of towns, than even the new Smoke Act affords, and till some modification is effected in decorators' work, either by a radical change in the practice of house-painting, or by the introduction of some durable substitute, we can hardly expect architects to take much trouble about what—in ten, or even two years—may be completely concealed from view, and "renovated," or replaced with other work by any incompetent tradesman.

We know of no invention of a material, or coating to walls, whereon the ever-present carbon of a London atmosphere will light harmlessly, unless it be glass; and we are surprised that we have heard of no soluble glass varnish that has had a general trial. For soluble glass, indeed, there have been several inventions; but what is required for the protection of mural decorations and woodwork, as also we may say for paintings and sculpture, is something free from the disagreeable oily or shiny appearance of paint and varnish,—the effect which is got in distemper work, and in that finished in turpentine, but in both cases by a sacrifice of durability. A ceiling ornamented in distemper colour is an entirely different thing in effect, from one painted in oil; and one finished with "flatted" colour, undergoes a complete change if it receive the "dead varnish," which some painters make up, with a view to preservation. We think, however, more use might be made of plates of glass in architectural framework,—either simply protective of the work on the walls, or painted at the back, as used in some cases recently. Where the exact configuration of pattern is not concerned in effect—as in marbles—we ought to say, that polish is a recommendation.

But, under existing disadvantages, it is desirable that more should be generally known of the ordinary processes. There are some things regarded as "common" and simple, of which the first principles are the last got to; and we go on using the methods which may or may not be best, without pausing to consider whether we thoroughly understand them. We ourselves do not see that a matter of such ordinary character, as common house-painters' work, is to be exempted from this comprehensive statement. Even the simple question of,—How long will particular coats of paint take to dry? like that of,—How soon is the surface ready for them? may have a great deal to do with the comfort of the proprietor of a house—and his pocket. For, painters' work, which under the present system has to be renewed constantly, is always, in such cases, carried on with much personal inconvenience to the occupier of the house.

To Mr. F. Crace Calvert, who has given much attention to the chemistry of pigments, and to the views of Chevreul on the science of colour—subjects on which he lectured recently at Marlborough-House—we are indebted for having first drawn our attention to the elaborate researches on painting in oil, which it is our more immediate object to notice, as helping towards that intimate theoretical and practical knowledge for which we have contended.

These researches are given in a paper which was read before the Academy of Sciences of the French Institute, by M. Chevreul, an extract from the proceedings of which academy is now before us.* It is not necessary to lay before our readers, the minute particulars which the author has properly embodied in a work of authority and reference. But we thereby deprive ourselves of the opportunity to show,—as it would have been a pleasure to us to do,—the extraordinary devotion of labour and attention given by one of the most eminent men of science in France—and which he properly considered necessary—towards placing on a sound basis, what might seem a very ordinary subject. We are not about to supply our qualified readers with a horn-book on the practice of decorators' work,—though our author begins his *Mémoire* by avowing some embarrassment, and an entire ignorance of what might constitute the system of painting in oil. He had been charged to report upon painting in white of zinc, a material which, we need hardly say, has been put forward as free from some of the disadvantages of white of lead. On this further subject, therefore, we may hope some day to have researches by M. Chevreul, to lay before our readers, beyond what may be contained in this present notice. The long series of experiments now before us were merely preliminary, and to ascertain the nature of painting in oil, generally. At present, eighty pages, with six folding sheets of tables, besides those in the text of the paper, comprise only the experiments which would appear to supply the foundation of the practice of house-painting; whilst to a second memoir, are deferred general considerations which appear to the author consequent upon the facts. Many conclusions are, however, arrived at now. At first sight of the particulars given—of examinations, carried on daily for months, of common coats of paint,—it might appear that the nicety of observation had gone far beyond the requirements. But, if observations of that character are not made at the outset of the use of practical processes, there is really nothing else to be done, but to pursue them from the beginning,—that simple elements may be somewhere recorded as the basis of science. This is what M. Chevreul has done with a degree of minuteness, most extraordinary, and which leads us to even a higher opinion than we had, of the habits of systematic analysis, common with our scientific friends on the Continent. Let us also remark, that the frequent "commissions" of the French Institute, for the examination of particular inventions and subjects of research, are worthy of imitation in our country. In our own particular field, there is ample ground for the exercise of a little more energy on the part of the Institute of British Architects,—in which body, the standing committees for research remain only talked about, and by which some of the few professional questions that have been broached, have not

* Institut National de France: Recherches Expérimentales sur la Peinture à l'Huile, par M. E. Chevreul. Premier Mémoire, lu à l'Académie des Sciences dans la Séance du 8 Juin, 1850. [Extrait du tome xxii des Mémoires de l'Académie des Sciences]. Paris, 1850.

been very conclusively treated. The heads of M. Chevreul's researches may be here stated. After setting down the chief materials used in the composition of a pigment, and the object sought by their introduction,—he first inquires, of what that which is called the drying of the work consists. In a second chapter, he inquires whether substances have an influence upon the duration of the "drying" of the paint which covers them. He next examines whether turpentine augments the *siccative* or drying property of linseed oil, and that of the same oil mixed with white of zinc. The fourth chapter contains researches on the influence of litharge, of peroxyde of manganese, and of heat, in rendering linseed oil "*siccative*." He then finds what influence substances mixed with the white of lead, or white of zinc, may have upon the drying of the painting; and the sixth chapter is an examination of different compounds of substances and oils with reference to the theory and practice of painting in oil. The work winds up with general conclusions. We shall not follow the exact order of the experiments, but shall give certain facts, along with a few of our own suggestions, which may lead to comparison with the results of our readers' observations, and perhaps to improvement in methods now practised,—if not to the invention of substitutes, free from the objections which we have believed to exist.

As M. Chevreul states the objects of painting, they are,—to gain different colour from that of the material painted upon, and to render the surface less susceptible to the weather, or to dirt. For these, there are three essential conditions of the process:—the first, that the paint should have sufficient liquidity to extend itself with the brush, and sufficient of viscidity to adhere to surfaces, so as not to run when they are placed inclined, or vertically, and to preserve the equality of thickness with which it has been laid on; the second condition, that after the application the paint should become solid; and the third, that after becoming so, it should adhere strongly to the surface. We might name other requirements as to be *desired*, such as that to which we have referred—the drying without the ordinary shining surface. Without considering colours, he finds that three ingredients usually go to the composition of paint. First, white, whether the substance be the white of lead (*céruse*), or the oxide of zinc prepared by heat; secondly, an oily liquid—whether that be linseed oil solely, or oil of poppies (employed at Paris especially)—to reduce the white to a paste,—to which paste are added afterwards, variable proportions of linseed oil and of essence of turpentine; and thirdly, of a "dryer" (*siccatif*)—whether the linseed oil prepared with litharge, or the same oil prepared with manganese, or the litharge in powder for the first coats and the deep tones. Sometimes, and for the clear tones only, the acetate of lead ground in oil is employed. The "dryer" is added, it would appear, merely to gain time, and he says, is occasionally to be dispensed with. It can, however, hardly be omitted in this country, and it is judged indispensable in France, wherever the coat of paint would not otherwise be completely dry in forty-eight hours, or in seventy-eight at the most, after the application. This limit appears to be chosen mainly with reference to the time which it is usually convenient to give to the operations, and in practice the first coat is seldom thoroughly dry, unless at the mere surface, before the next is applied; indeed, we believe the absolute dryness is not preferred by most painters. M. Chevreul, in his experiments, treated the coat as ready for another, when it did not receive a mark from the finger, but he admits that the entire drying might not have taken place. Any existing practice must, it is true, be viewed cautiously, especially where it may be of a labour-saving nature. M. Chevreul does not appear to have had much opportunity for considering the element of durability; but it appears to us that this might turn out to be affected by the properties of "dryers," if not also by the hastening of the drying. Theoretically, it would seem that the first coat should be as much as possible absorbed by the pores of the wood. This might, perhaps, occupy some time. The "dryer," however, on the other hand, acts mechanically as well as chemically, and therefore might to a certain extent be like the coat of size, which is introduced by ignorant or unprincipled workmen, and which saves material by interposing an obstacle to the absorption, but at the expense of durability. We notice this, in order that we may suggest that the ordinary *litharge* priming, at least, may be more to the saving of time and material than to durability. It may be said that the ordinary process, when fairly executed, answers the purpose; but when we consider the inconvenience in painting, even at longer intervals than seven years, and the necessity which we have urged there is, for getting at some process by which decorations may be rendered permanent, it will, we think, not be held unimportant to inquire into even the practice as observed by the best hands. To invite opinions is our chief reason for broaching the present subject. The painting of a street door even once in three years, is comparatively trifling in expense and inconvenience; but when we find the elaborate and costly decorations of a public room under the necessity of renewal in three years, or less (as in a case within our knowledge), it may be supposed that there is room for economy somewhere, as to preparation of paint or final coating, if there be not also reason for researches such as those of M. Chevreul, out of regard for the interests of *art*.

Coming first to the question of the *drying*, it must be stated that although the term is used for want of a better, it is really a misnomer. Our experimentalist finds that paint "dries"—not by the evaporation of something, but by absorption, and that of oxygen. Work would dry quicker in oxygen than in the ordinary compound—atmospheric air—and it was found that it would not dry at all in carbonic acid. The entire advantage of using a charcoal stove, even where evaporation doubtless is required, as in the setting of plaster, may therefore be worth considering. Paint is indeed found to dry quicker in summer than in winter, in fact, so much so as to allow the ordinary "drier" (*siccatif*) to be sometimes even dispensed with, as we said, in France. The well-known property of bodies to oxidise under favourable circumstances at high temperatures seems to be concerned in this.

Oil possesses the property of absorption of oxygen and the consequent solidification. But the process does not go on rapidly in the original condition of the liquid. The delay is lessened by previous boiling, or by exposure to the air; but would still interfere with the object, unless the boiling, or storage, could be conducted on such a scale as to answer commercially, having regard to variations in price, and the large quantities required by house-painters, as compared with artists. The oils and substances used in painting possess in varying degrees, the power of absorbing oxygen, and, using the French terms, may be called *siccative*, or *anti-siccative*, relatively to one another. It is by supplying the deficiency in one case by the advantages in another that the desired quickness of drying is obtained; but care must, of course, be taken that other conditions of a disadvantageous character do not arise. Both white of lead and white of zinc will manifest the *siccative* or "drying" property; and the same property may exist in materials to which paint is applied. The surfaces of metals seem to act rather in a negative way than in a positively *siccative;* but the drying influence is strikingly exhibited by a surface of lead; whilst in wood, as might be expected from the porous nature of the material, the *siccative* property is small. It is curious that a great proportion of the experiments were tried on oak, which is so seldom painted with us. There is reason for this, the acid of the wood having a powerful action on lead. In the old churches, lead was often laid on oak boarding, and we have known very thick lead converted into a salt, by the action. M. Chevreul found the coating to dry with exceeding slowness. A coat of pure linseed oil took to dry, on the *surface*, thirty-two days, in the spring; whilst on poplar, three coats of the same occupied twenty-seven days, and on fir twenty-three days.

The ordinary mode of increasing the drying property of linseed oil is by boiling with it a certain quantity of oxide of lead, called litharge. The peroxide of manganese can, however, be used with great effect. Care must be taken as to the introduction of a yellow tinge, which would, of course, be injurious to white and some tints.

It must not be supposed that all the substances lately recommended as substitutes for white-lead are *siccative*, rather than *anti-siccative* to oil,—for it was found that the oil with antimony took half as long again to dry as the pure oil, in a first coat on glass. It is, however, impossible to say, without experiment, what may be the behaviour of particular siccatives in different circumstances. The resultant action of bodies entering into the composition of a particular pigment, as in the case of two siccatives, is by no means the sum of the separate qualities. M. Chevreul found, that if to a portion of pure linseed oil was added about a third of manganesed oil, the three parts of pure oil, which would have gained alone a quantity of oxygen which may be represented by the figures 1·985, and the one part of manganesed oil, which would have received as much as is represented by 4·719—the numbers together making 6·704—in combination actually absorbed a quantity represented by 30·826.

We therefore see that the siccative properties of the manganesed oil, are far greater than those of the pure oil;—but we discover further, that an enormous increase of these properties may be made by mixture. Thus, it is well remarked, that had such a fact been known earlier, time would not have been occupied in attempts to improve the siccative properties of the pure oil: but the manganesed oil would have been made the subject of such efforts. Boiled linseed oil with manganese, in place of the same oil with litharge, is, we believe, almost unknown in England, though we are aware it has been recommended for general use in combination with the white of zinc—where that base is required—as carrying out the principle of avoiding in the work all injurious ingredients.

As we said, pure linseed oil, having the capacity of absorbing oxygen, is to be regarded as siccative. The property is nearly always augmented by a mixture with white of lead, or white of zinc. If this mixture is not sufficiently siccative, it may be made so, as in accordance with the usual practice, by the addition of a "drier,"—say either the litharged oil, or the manganesed oil. But the white of zinc would have been found much less siccative than the white of lead. The white of antimony is still less siccative. In the spring of 1845, M. Chevreul compared the drying properties of the three substances as below. Equal quantities of oil were mixed with as much of each as was judged requisite in the opinion of an experienced hand: coats were laid upon a prepared canvas, and this was the result:—

	Grammes.	Grammes.	Grammes.
	Linseed oil, pure ... 10 White of lead ("de Lille") ..... 18·5	Linseed oil, pure ..... 10 White of zinc, prepared by M. Mathieu de Vitry-le-Brûlé ..... 7·4	Linseed oil, pure ..... 10 White of antimony, prepared by M. Rousseau 40
The first coats respectively dried in	4 days.	18 days.	50 days.
The second ditto...	3½ „	15 „	28 „
The third ditto. ...	3 „	5 „	27 „
	10½ „	38 „	105 „

Thus it appears that unless we had the means of adding to the siccative properties of the white of zinc, it would be hardly possible to apply it in house painting.

The white of antimony we will defer speaking of. But it will be seen that the zinc has some advantage over the lead in regard to the quickness of drying which characterizes the later coats. It also appears to take up a greater proportion of oil, which corresponds with what is stated to us in London. On the other hand, M. Chevreul says, it "covers" less than the

white of lead, though better than the antimony. We shall find that this is not borne out by English experience. Experiments in the summer and autumn of the same year gave similar results, excepting that the difference of the temperature was felt, thus:—

	Days.		Days.
First coat of white of antimony only took	14	instead of	50
Ditto white of zinc	ditto 7	ditto	18

The arseniate of the protoxide of tin, which had been proposed as a material, was found to be absolutely unfit for use, as it would not set at all. As to the properties of the oxide of antimony, tried on glass, it is found to be anti-siccative, that is, relatively to the glass. Litharged oil neutralizes this property, as shown below:—

	Linseed oil, pure.	Grammes. Oil, pure..... 9·11 Oxide of antimony ..... 14·50	Grammes. Oil, pure..... 8·85 Oil, litharged..... 2·00 Oxide of antimony ..... 14·50
First coats respectively dried in	17 days.	26 days.	21 days.
Second ditto.....	17 ,,	8 ,,	9 ,,
Third ditto	9 ,,	9 ,,	2 ,,
	43 ,,	43 ,,	32 ,,

It should be remarked that the increased rapidity of drying in the later coats, was not due entirely to the influence of the preceding coats. The increased age of the mixture prepared for the first coat, has to be taken into account.

The proportion of the drier as an ingredient in winter, varies from 3 to 10 parts per 100 of linseed oil; whilst in summer, 2 parts down to the smallest possible quantity may be enough, the white appearing to be sufficient in the latter case. The drying, or rather setting, by the absorption of oxygen, explains why paint can be preserved under water without its drying, provided that the pellicle which forms upon the surface of the paint be not broken.

In case of adding the "drier," consideration must be given to the surface,—as, whether we are using a first, second, or third coat, and as to the temperature of the air. Thus the "drier," ordinarily so called, loses much of its importance in certain cases. On the other hand, a proper knowledge of the combinations which may be made, and which are inquired into in these researches, may allow of some substitute for the litharged or manganesed oil; where, as in the case of clear colours, a yellow or brown tinge would be injurious. Thus, linseed oil exposed to the light and air, losing its colour, and becoming siccative—it could then be employed with either the white of lead or the white of zinc, without altering the whiteness.

The researches, however, contain many more important particulars, bearing not only upon the questions with which we started, but upon the use of white of zinc, and these may be further drawn upon with advantage, if they do not also call for some other remarks of our own.

ORIGINALITY *v.* COPYISM.

Is originality inconsistent with the modern practice of architecture?

Time was, and not very long ago, when the answer to the question would have been,—What do you want with originality, or what has it to do with the subject? Is not the Gothic architecture you may now see for yourself, if you will, good enough for you, that you wish to alter it? Here are the choicest possible examples before you, prepared, drawn, and engraved with the greatest minuteness and accuracy. Copy them, and you will attain to a like perfection.

This is, however, happily, the reasoning of a bygone age; and with the new developments of the present generation, there has arisen a different and a more enlightened estimate of the objects, aims, and perfection of architecture as a fine art.

I am induced to discuss the question I have proposed, for the purpose of eliciting, as far as possible, without prejudice, the true meaning of originality; and in what manner the practice of it in the architecture of the present time, will lead to the formation of a broad, comprehensive unity of style, consistent with the true conceptions and dignity of the most useful, important, and beneficial of the fine arts.

Assuming, then, that the system of copyism is dying out, and a new and wider field opening to the future tillage of intelligent and earnest hands, it may be well to consider what its influence has been, both good and bad.

It was beneficial in this respect, that it put a stop to the wildness of eccentricity and almost universal bad taste of the preceding age, and induced men to examine and explore the relics and remaining works of a long-despised but fertilely-artistic generation. It detected beauties whose existence apathy and indifference had long ignored, discovered principles which might otherwise have been lost to us for ever.

But on the other hand, it has led into deplorable errors and misconceptions, falsified the intent, as it has corrupted the purity of truth in art, and if persisted in, will change its whole fabric into a shapeless lump of clay, with no living feature on its surface to tell of any vital essence within.

We must, however, on no account, deny the real claims of Gothic (as indeed of all true art) to our admiration and emulation. Is it not the expression of the very life of the age which produced it? and which it adorned and ennobled. Are not its principles as true, as perfect, as those of any development of art in any period of any nation? Does it not point out to us clearly and authoritatively the path we must trace, the road we must follow, to attain to corresponding results?

If, then, such are its lessons, let us accept them in the right spirit, nor longer hanker after that most fruitless source of design—precedent. Our movement is forward, not backward: we have the wants of the nineteenth, not the fourteenth century to contend with, beautify, and adorn.

The main consideration with regard to the revival of Gothic architecture may be thus stated:—Are the manners, customs, and wants of the inhabitants of this country in the present century to be suitably expressed, conveniently rendered, and consistently treated by an application of Gothic architecture? or is it possible so to graft a new shoot upon the stem of Mediæval art as to obtain the necessary requirements with the same fitness and beauty, and a like expression of architectural character?

This opens out a wide field of inquiry and investigation, and one attended with no small difficulties, by the way; but the importance of the question will well repay the most minute, careful, and elaborate analysis and consideration.

With reference to Domestic and *Street* Architecture, and the adaptability of Gothic to the requirements of every-day life, there are several matters to be duly considered, such as convenience or fitness, cost (by no means the least), adornment, beauty of general effect, and consistency of treatment, unitedly producing a truly artistic expression of the useful.

In this case it may be said that much depends upon this,—whether the plan be made subservient to the design, or the reverse. Granted: but as one of the main beauties of the style is a certain irregularity of plan, producing picturesque effect in design, so is the style more adapted to buildings where the site is not limited within three square walls and a street; as, for instance, in villas and country residences, where there is plenty of ground attached to take advantage of, as you choose, and as most adapted to the character of your design.

If this be admitted, the conclusion is, that for town architecture, the Gothic style is not so well adapted, because the squareness of plan and uninterrupted lines of a regular street façade do not afford advantageous grounds to work upon with success; though I do not for a moment assert that it might not be made infinitely superior to the no-style at all of prevailing no-taste.

Still, it will, I think, be generally admitted that the attempts at *regular* design in Gothic street architecture have been failures, and most of them such as no one desires to see repeated. This is, of itself, no argument at all against the possibility of its successful adaptation; but the question is this,—Is there not a violation of principle in the confinement and regularity of plan, with the aspiring form, the distributive support, and thrust principle of Gothic architecture?

There is not in it the same means of breaking up a blank wall, of getting light and shade on vertical surface or background, as in Classic art. There are no pediments to windows, projecting columns, pilasters, and massive cornices; not the same opportunity of gaining effect by slight breaks, by introducing quoins at angles, &c.; and its principal means of obtaining picturesque effect, and contrast of light and shade, are by breaking up the lines of the façade by projecting turrets, detached roofs, pointed arches, high gables, pyramidal towers, and pierced tracery. Even buttresses are to a great extent inadmissible, for they would not be allowed, by district surveyors, or public approbation, to project into streets and crowded thoroughfares; and excepting in the out-districts of large towns, ground is much too valuable to waste the space they would occupy in front of a long range of buildings; besides which, a long unbroken line of front, a large flat extent of surface, is not suited to the development of Gothic design; there is nothing of the Gothic character about it—no scope for its consistent treatment.

For villa and cottage architecture the case is somewhat different, on account of the advantages in the disposition of parts before alluded to, and such buildings may have both the Gothic spirit and character infused into them. It sits more naturally upon them, and is ductile, capable of becoming a valuable means of expression both of fitness, constructional treatment, and beauty of design; but this only in most able and skilful hands. But here comes the consideration of cost.

Now, whatever may be *said* of the cheapness of Gothic applied to domestic purposes and simple uses, it is generally found very different in practice; and the really consistent handling of the style is anything but economical.

As the majority of persons *will* consider this question of cost in the matter of building, in spite of all the fine writing and æsthetic principles elaborately prepared and levelled at them, it may become questionable whether true art would recognise a style in which the wants of the majority are sacrificed to those of the minority,—would allow of one building of merit to be erected, to a hundred—nay, a thousand—with none at all, not even the ghost of one; for, of all the wretched abominations in the world of architecture or building, Starvation-Gothic is, without a doubt, the worst; and all attempts to make a building *look Gothic*, when from the very circumstances of the case it cannot by any possibility, are of the most futile and beggarly description.

In hotels and large public buildings—as, for instance, town-halls, courts of law, hospitals, exchanges, and the like—the circumstances of the individual cases will materially decide whether an adaptation of Gothic is admissible. Hotels and town-halls, or what serve for such, are to be found on the continent of Gothic character, with great beauty of design and picturesque effect, without a sacrifice of utility or convenience; and I believe it quite possible to produce a like good effect in modern times by as skilful a treatment, but at the same time not on a limited scale or economical principles. The interior fittings and finishings, to be consistent, will necessarily prove expensive; and as such buildings are frequently erected with an eye to a certain per-centage, they would not be very agreeable speculations to the parties interested.

The revived Italian style would prove much more suitable, and admit of much more scope in treatment and design, as indeed it may be said to have already done, in the club houses of Pall-mall, and similar instances.

The foreign "Hotels de Ville" are perhaps, of all others, the most interesting specimens of civil Gothic architecture, unique as they are, and eminently picturesque; but we do not, in

these days, require a copy of them for the mere sake of having something like them in our own country.

In the case of public hospitals, I think it may be said, that when in a town Gothic is inadmissible. Compactness and economy of space, room, and materials, become essentially requisite. In the country the case is different, and such buildings may be carried out with more advantage in a style which admits of producing the most effect by means of irregularities of site, or other circumstances, and which, in able hands, are the very foundations of its beauties.

But here again, dispensing with the classic Italian of the Renaissance, the more ductile and picturesque *rural Italian* will be found admirably adapted to such purpo es, admitting of as much variety in plan and design as the Gothic, having, in fact, the same, or rather *similar* means of expression of architectural character, viz. projections, overhanging roof, towers, turrets, and gables; the chief and really distinguishing feature being the form of the arch. Here, then, we have a choice of styles, both proper and expressive. Which are we to follow, having no style of our own? That which is the more universal in its application, which, so far, we have found to be "modern Italian."

Law courts and public halls, on a large scale, do not seem fitted for the minute detail of the Gothic, or for its solemn character. If we may judge from modern instances, it is inferior in capacity to the classic in almost all respects. We need go no further than St. George's Hall, Liverpool, for an example of what effect can be produced; and I do not hesitate to assert that there has, as yet, been no Gothic design to be at all compared with it for merit of originality, adaptation, or design.

The fact is, that Gothic is rather the expression of the religion of an age, than of its civil uses, an age when piety, or the assumption of it, was illustrated in every action; when the belief was universal, that no greater offering of sacrifice could be presented to the God of all, and the saints, than to build churches, chapels, oratories, shrines, abbeys, and colleges; and a natural belief, too, where there were no public, and but few private duties to attend to. But as the duties of a citizen and a Christian are not thought *now* to be incompatible, that those of the former, if honestly performed, are in reality those of the latter, is it not also natural and possible that architecture, which is but the expression of the wants and customs of an age, may have changed also, and what can possibly be the object, what the utility of persisting in the reasoning and practice of by-gone times, as if we were now living in, or preparing for, the fourteenth or fifteenth centuries.

But we will now turn to the consideration of schools and churches, and their treatment in design, and in these lies the chief difficulty, I mean with respect to determining whether they can be carried out in the Gothic style, without sacrificing utility and fitness to an imaginary standard of architectural perfection. I have already remarked that I consider the Gothic to be peculiarly a religious style, as it undoubtedly was in its time. Is it so also now? Whether or no, these subjects really afford most scope for successful adaptation and treatment in the modern practice of Gothic architecture, and to the great variety, both in plan and external arrangements, that schools and churches both afford, is owing this beneficial development of ways and means to produce a really good Gothic design.

The church of the Middle Ages is the *beau idéal* of Gothic, as the heathen temple is of Egyptian, Greek, or Roman, or the mosque, of Moorish; and, for my own part, I believe the cathedral of the fourteenth century to be as much the perfection of its style as the Parthenon of Greek, or the Pantheon or Coliseum of Roman.

But herein lies the solecism in modern attempts after Gothic design,—that it was in the first instance contended, on the revival of the style, that all that was necessary to produce a like consistent (!) effect, and one of as much beauty of design and conception, was to set about making an exact copy of what had been before executed; to re-erect a building as nearly as possible a *facsimile* of something or other still in existence, and persuade yourself and others into the belief that you had done something equally clever, beautiful, and original! Yes, copy all you can, jumble it up together, work it in somehow or other, and, so long as you have the authority of precedent to back you, what criticism need you fear? But of this we have had enough and to spare.

The style itself, carried out in as nearly the same spirit as it is possible to attain to that which guided the old masters, does afford, however, abundant scope both for new conceptions and true artistic design in buildings for religious purposes, or for school-houses; and I, for one, am still so much prejudiced in its favour, that I should regret to see it abolished in modern practice, if only for the reason that it would disallow all future attempts to render it applicable to such purposes.

But unless we look upon the style as a tractable one, and one also in which originality is to be introduced at discretion, one in which we are not to be compelled to produce authority for all that we think, and all that we execute, we had better give it up at once and for ever, and try no more to infuse life into a style by dressing it out in the winding-sheets of five centuries ago, dug up from the accumulated heaps of neglect, prejudice, and bigotry in which it had been buried, and its everlasting features of truth, consistency, and genius, obscured from the eye of man.

In these latter days we have been called upon to abjure all our old notions of right and wrong in matters of art and architectural taste, to condemn all that is not Mediæval; and, still later, we have been commanded, in a voice of thunder, to abhor all Classic art as vile, unnatural and all but devilish, and to bow down before the altar of "Venetian Gothic" (neither one thing nor the other), with all the devotion, affected or real, of the most complete system of slavery ever forced upon ignorant and superstitious men by the cunning dexterity of very considerably self-interested priests.

It may, and must require a peculiar constitution of mind to detect the immensely superior beauties of such a style as this mixed Gothic of Venice over that of the really majestic cathedrals and churches of our own land, or the softly beautiful façades of "*La belle Italie;*" but it must require something more than such a constitution to declare all such to be "pestilent rubbish,"—positively contaminating to sight, sense, and touch; and it is as certain that no amount of such invective, however foully it may be uttered, or declamatorily hurled, will ever, in any wise, prove such to be as poor in effect, as false in principle as the models set up for the exclusive admiration of the present and all-succeeding generations.

It would appear, then, that in by far the majority of cases supplied by the requirements of the present time, the Gothic style does not prove itself adapted to them, inasmuch as it may be, and frequently is, from the circumstances of site, position, &c. deprived of its principal attributes and characteristics, the further objection of expense may be also added to the number of its detractions.

For hotels, hospitals, and public buildings generally, it is found to be inconvenient, and there is a difficulty of obtaining that most essentially requisite of all things,—an abundance of light,—without marring the effect of the design, and destroying its character.

For schools and churches, and all ecclesiastical buildings, it has a peculiar beauty of its own, which is certainly not surpassed, if equalled, by any style of any other period.

But, on the other hand, we find that the Italian style is a more extended basis of adaptation for modern requirements, and these, when summed up, will be found to be more in accordance with its principles and capabilities, than the Gothic; that the former is all but universally applicable in modern practice, the latter only very partially so.

But it must not be inferred from this, or any such conclusion, that the *copying* of anything Italian will ensure a satisfactory result (such a practice only brings it down to the modern level of Gothic architecture, which hitherto has been almost all copyism), or that by tacking a Palladian window to this front, and a door to the other,—a portico here, and rustic work there,—any originality of composition or design, or any consistency of treatment, can be obtained.

The days of copying Italian in the same slavish style as we have been doing Gothic, or as we did with the style in question before the Gothic revival, we will hope are past and gone.

It will be well for us if it should prove that we have not copied altogether in vain, but now that we have been surfeited with it, we set to work in earnest to act upon the *principles* it was thought more easy to ignore.

It is almost impossible that a universality of style can be obtained in the present generation, if it ever will be done again. It must necessarily be a work of progression and education. The main object now is to give such a bias to the artistic portion of the rising generation, as shall tend to a beneficial and satisfactory ultimate result; that by acting upon such principles as we are able to discover in those perfect styles of past ages,—principles alike founded on consistency, utility, and true artistic beauty,—that in due time we may attain to a like perfection, by starting from the same point along the road of the art-history of the world; and pursuing the straight and narrow path, we may be led onwards through many discoveries and new developments to a like grand climax of all that is beautiful, glorious, and true. E.

THE IRON INDUSTRY OF THE UNITED STATES.

On 28th ult. a highly interesting discussion took place at the Society of Arts, opening with a paper on the Iron Industry of the United States, by Professor John Wilson, F.R.S.E. the commissioner who reported to our Government on this subject, at the American Exhibition.

Iron, said Professor Wilson, appears to have been first made in Virginia about the year 1715, previous to which the colony was supplied from the mother country; and, shortly after, the manufacture was established in Maryland and Pennsylvania. The manufacture progressed but slowly, though the quantity exported exhibits a regular increase, averaging during the ten years from 1740 to 1750, about 2,360 tons per annum, which was gradually increased for the next twenty years, until in 1770 it reached 7,525 tons, being rather more than one-sixth of the entire quantity of all kinds of iron imported into England at that time. As the country settled down after successfully asserting its independence, and the works of industry were resumed, we find a great advance was made in iron-making. In 1810, the whole number of furnaces in the United States was 153, giving a production of 54,000 tons per annum;—equal to about 16lbs. per head of the population. In 1830, it was 165,000 tons. In 1840, the census returns give the gross production at 286,903 tons. In 1847, it is supposed to have reached its maximum amount, not less than 800,000 tons being the furnace returns for that year.

The iron-making resources of the United States are very great: the distribution of ores, many of the richest description, is general throughout the Atlantic and Western States; while the enormous area occupied by the coal measures testifies to the abundance of fuel for the development of industrial applications. The ores comprise every variety found in Europe: those principally used for smelting are the magnetic oxides, the hæmatites, and the clay carbonates of the coal veins. Besides these, the "spathic or sparry carbonate," and the "oligist or specular ore," are used in some of the New England States, but only to a limited extent. Quite recently a discovery has been made of rich seams of black band, in connection with the bituminous deposits of the great Eastern Coal field, which will probably hasten the development of this industry in that favoured region. The following divisional arrangement will show the chief seats of the industry, with their respective advantages and capabilities, their production in the last year (1853-4), and the estimated cost of manufacture:—

1. The Housatonic district—Production, 10,000 tons; cost per ton, 20 dols. to 25 dols.

2. The Hudson River district — Production, 80,000 tons; cost per ton, 18 dols. to 20 dols.

3. The Delaware and Lehigh Rivers district — Production, 120,000 tons; cost per ton, 16 dols. to 18 dols.

4. The Schuylkill River district — Production, 100,000 tons; cost per ton, 20 dols.

5. The Susquehanna River district—Production, 120,000 tons; cost per ton, 15 dols. to 18 dols.

6. The Potomac River district — Production, 125,000 tons; cost per ton, 20 dols.

7. The Ohio, Cumberland, and Tennessee Rivers district—Production, 150,000 tons; cost per ton, 20 dols.

Besides these well-defined districts we must allow about 100,000 tons as the production of the numerous isolated works scattered throughout the upper portions, especially of the Atlantic States, where charcoal as fuel is universally used. In these iron of the best quality is made, but at a cost of nearly double that of the coal furnaces.

The present consumption of iron in the United States may be taken at 1,200,000 tons. To meet this the home production is not at present equal. About half the present make is consumed for castings, and the remaining portion is converted into wrought iron, at a loss in waste, &c. of about one-third. This practically reduces the total or available production to 700,000, leaving a deficiency of 500,000 tons to be supplied by other countries.

This large importation to meet the home consumption is obtained entirely from this country, and forms a very important item in the commercial intercourse of the two countries.

To retain this good customer of course is very desirable, and Mr. Wilson is strongly of opinion that this may be done for many years to come; but the time and the quantity will depend materially upon our "economy of production."

The iron industry of the United States (continued the reader) is at present only in its infancy, an offspring quite of the present century. Its growth has been somewhat irregular, it is true, but when we find that it has already reached the gross amount made in this country only twenty years ago, and when we recollect the vast mineral resources of the United States, the rapid increase of population, with its increasing demands, and its unquestionable energies and power of application, it forces upon our minds the conviction that the time is not far distant when it will not only furnish sufficient for its own consumption, but be in a position to compete with us in the other importing markets of the world.

The discussion was opened by Mr. T. M. Gladstone, who defended the English ironmasters as improvers of processes, to their backwardness in which Mr. Wilson had referred. He also differed with him as to the more immediate future prospects of the States, either as regarded their home supply or their capability of supplying neutral markets. Our present generation of ironmasters, he appeared to think, were perfectly safe on these points. Mr. Macgregor followed. He also felt convinced that those interested in iron property in this country had no reason to apprehend injurious competition on the part of America. Mr. Bird spoke at some length. He alluded to the fact that the production of iron in this country had reached the enormous amount of 3,000,000 tons of pig-iron, which three years since had been produced at 36s. a ton. He agreed with Mr. Macgregor that they would not lose America as a customer. Indeed, various of the speakers dwelt much more on the iron industry of this country than on that of America. To this, after Dr. Percy, Mr. May, and Mr. R. F. Davis had taken part in the discussion, Mr. Bevan alluded. He himself, however, was mainly anxious that our ironmasters should discover why the Americans were unable, even now, to compete with us who had to contend with heavy charges of freights and duties, 80 per cent. on the English shipping price. On this point, after Professor Wilson had reviewed his notes of what the various speakers had said, Mr. Campbell, of New York, shed some light. In reference to the manufacture of iron generally in the United States, he remarked that the prominent difficulty, in the minds of several gentlemen, appeared to be the transportation of the article from its insulated position to a market at the seaboard. At present, and probably for years to come, the western states would require the largest proportion of iron consumed in that country; and the fact was overlooked that iron manufactured in the interior was, in most cases, adjacent to the channels of navigation, and already half the distance from the seaboard to its destination and place of consumption in the west, while English rails landed at New York had to pass through the same channels, double the distance, and at a corresponding increase in cost of transportation. American rails were generally very much superior in quality to English, and were invariably preferred for curves, and all places requiring the best iron; and such was the desire for these rails that the manufacturer found a ready market at his own furnace for all he could produce. In reference to the inability of Americans to compete with the English in this department of industry, Professor Wilson had very properly remarked that they had not the necessary capital; and he would add, that America was comparatively a young country, with a rapidly increasing population, and a large portion of her capital was as yet employed in opening up channels of navigation and communication for developing the vast resources of the great west.

The chairman, Lord Granville, closed the discussion by some well-placed remarks in harmony with much that had been said, to the effect that in every assembly of liberal men in this country it was now an acknowledged thing, that the time was passed when to depreciate, intellectually or physically, their cousins on the other side of the Atlantic was considered a mark of their own superiority. As an ironmaster himself, he had felt some twinges at the prospect of American competition; and it was, therefore, very satisfactory to him to hear of the power possessed by England for such a competition; but his greatest comfort was derived from what fell from Professor Wilson himself, and it was strengthened by the last observations of Mr. May,—namely, that in proportion as the American iron trade increased, the import of iron from this country had increased in a still greater ratio.

PROVINCIAL NEWS.

Stamford.—The new cemetery here was consecrated by the Bishop of Lincoln on Wednesday before last.

Landbeach.—The little church of Landbeach is under repair. The whitewash that has been plastered on the pillars, arches, and windows has been scraped off. Under the whitewash on the walls have been discovered several ancient paintings and texts of Scripture, much defaced.

Isle of Wight.—Ground has been broken at Freshwater-gate, Isle of Wight, preparatory to the construction of a strong redoubt there.

Oxford. — The site intended for the new museum has been opened, to ascertain the nature of the soil, which, it appears, has turned out to be a bed of gravel of great depth. This material being thus found on the spot will, it is thought, make a difference of some few hundreds in the contract.

Weeford.—The church here has just had two stained glass windows added to it: they are of Early English design. The one represents the Nativity and Baptism and the Last Supper of Our Lord, in panels upon a scrollwork of vine, on a ruby ground, and is surrounded by crocketed borderings, with inscription at the base. The second window represents Christ's Agony in the Garden, the bearing of the Cross, and the Ascension, surrounded by angels bearing inscribed labels. These subjects are arranged on a similar ground-work to the other window, with borderings, &c. There is an inscription underneath. The windows have been designed and executed by Mr. George Rogers, of Worcester, who was commissioned by the committee to erect the memorial window to the late Queen Dowager in Worcester Cathedral.

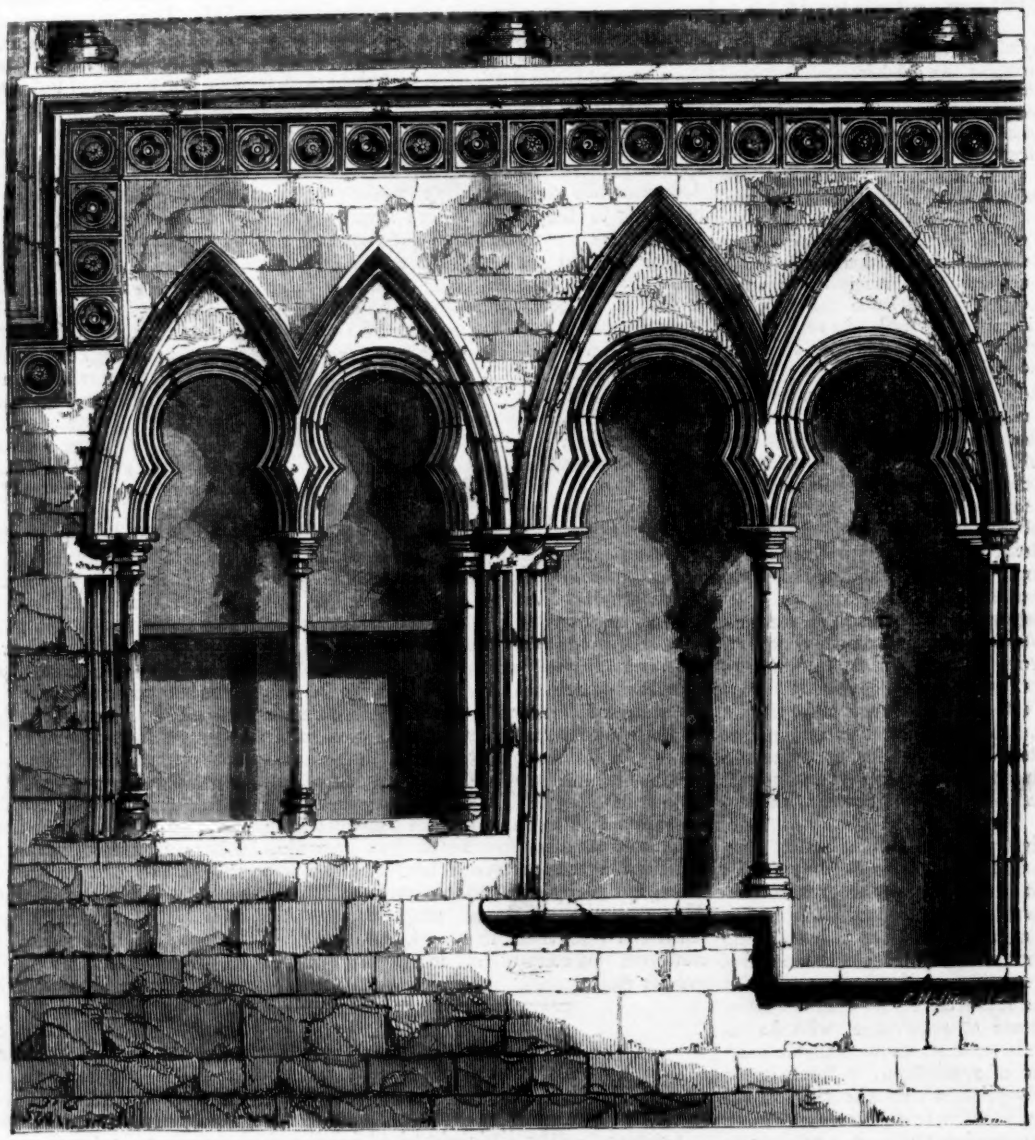
Wolverhampton.—The gas company of this town have just held their half-yearly meeting. The report by their engineer showed that for the half-year ending 31st of December, 1854, the profits of the company were 2,853*l.* 10s. 10d. which enabled the directors to recommend a dividend of 4½ per cent. for the half-year, amounting to 2,502*l.* upon the paid up capital, a balance of 351*l.* 10s. 10d. to be transferred to the reserve fund, which would then amount to 2,673*l.* 18s. 3d.: balance remaining in hand, 451*l.* The chairman stated that, notwithstanding these fair results, during the past half-year coals had cost 1,000*l.* more than in the corresponding portion of last year, and other expenses had showed an excess of a further sum of 200*l.*

Ashton-under-Lyne.—The committee of the district Odd Fellows have decided upon the erection of a hall for the use of their order, according to a design by Mr. Lindley, of this town, architect. The cost will be between 2,000*l.* and 3,000*l.*

Liverpool.—While the chapel connected with the workhouse here was undergoing alteration, on Tuesday in last week, the wall very suddenly fell, and caused the death of one man and the serious wounding of two others.——Here, too, as elsewhere, the severe weather, as we have already noted, threw thousands idle. In Birkenhead not less than 10,000 masons, navvies, and other artizans have been out of employment, and walking the streets in a state of almost absolute starvation.——It is stated to be more than probable that an arrangement will be agreed upon by which the Liverpool people will become the owners of the entire Dock estate on the Cheshire side of the Mersey. The terms have not been finally settled; but it is understood that the Birkenhead people have offered to sell their interest for something over ten shillings in the pound upon the amount expended. The purchase of these works by Liverpool is recommended as much preferable to extending the Liverpool docks northward.——The Conservator of the Mersey, in his annual report, just published, states, in regard to the progress of the Birkenhead Dock-works during 1854, that for the stone coffer-dam partly overturned by the water impounded within it on 14th March, 1854, a clay dam has been substituted and completed. 100 lineal feet of the south reserve river wall has been completed, and joined to that portion of the stone dam left uninjured at the south side. About 300 lineal feet of the north reserve river wall has been added, and about 500 lineal feet of it, built in 1847, raised 3 feet higher. The sea embankment at Leasowe has again been injured by the late heavy gales.——The Liverpool Improvement Bill, under conditions, specified in the Parliamentary proceedings, was read a second time, on Tuesday before last, in the House of Commons. It is brief, and contains twenty-two clauses. It gives power to the corporation to purchase the land, premises, &c. required for making the proposed streets along the docks, for cutting away part of the Old Churchyard—rights of dead and living respected,—and for widening Shaw's-brow. In the event of unoccupied land being caused by the making of streets, the corporation is to have the privilege of selling it to the Dock Trust or to private individuals.——The half-yearly meeting of the Liverpool United Gas-light Company was held on Tuesday in week before last. The directors recommended a dividend of 5*l.* per cent. for the last half-year, on the consolidated stock, and 2s. 6d. per share on each 25*l.* A share, on which a call of 2*l.* 10s. per share had been made, previous to 1st July, 1854. The chairman said the affairs of the company were never in a better position than at present. The report was adopted.

Manchester.—Two new warehouses are being erected in this town, one for a wholesale house, which forms a block of masonry occupying the entire area between two streets, and is 300 feet long by 75 feet wide. The cost of erection has been about 11,000*l.* The other is just commencing: the estimates for it were 45,000*l.* It will be 300 feet long by 90 feet wide, and 95 feet extreme height. It is to have four floors besides the basement, so that it will have a total available area for goods of nearly 135,000 square feet. It is estimated to require from 60,000 to 70,000 cubic feet of timber to supply the internal fittings of woodwork alone.

Blackburn.—At the twentieth half-yearly meeting of the local waterworks company, held on Saturday week, it appeared from the chairman's statement that the directors had determined to increase the capacity of their reservoirs. The embankment of the Guide Reservoir was to be raised 3 feet, which would increase the capacity of the reservoir to the extent of 12,000,000



SEDILIA AND PISCINA, HYTHE CHURCH.

gallons, at a cost of 800*l*. It was also intended to create an additional service reservoir, to hold ten days' supply, the present only containing about one. The estimated cost would be 3,500*l*. A dividend of seven per cent. per annum was then agreed to.

Gateshead.—The mayor of this town has invited all who are desirous of seeing a proper music-hall erected to unite with him in carrying out the project.

Edinburgh.—A part of the ancient city wall has been removed, in order to improve the appearance of the south front of the Royal Infirmary. In lieu of the rampart or wall, a low wall of hewn stone has been constructed, which is topped with a railing. The privacy of the ground is secured by the masonry, and the rails admit a freer circulation of air than the old ponderous screen masonry. The local *Post*, in alluding to this alteration, remarks that "the south front of the infirmary is heavy, dull, and gloomy, while that of the Surgical Hospital is not so handsome and pleasing as might be desired."——The paling has been removed from the north part of the new National Gallery, revealing the whole masonry of that part of the building.——Among other new buildings recently raised in this city, the paper just quoted refers to an addition made to house and shop accommodation on the George IV. bridge. The loftiness of the pile, the beauty of the stone, and the elegance of the arrangements, it remarks, render this block of buildings one of the finest additions to the city architecture.

Glasgow.—The Loch-Katrine water supply scheme is to be carried. At all events, the two engineers employed by the corporation have reported in favour of it. The report, by Mr. Robert Stephenson and Mr. I. K. Brunel, was received by the council on Tuesday in week before last. It approves, according to the local *Gazette*, of Mr. Bateman's plans, and recommends that Loch Katrine should be taken as the source of supply for the city.

Dunfermline.—The Dunfermline passenger-station of the Edinburgh, Perth, and Dundee Railway Company has been totally destroyed by fire; neither books nor money could be saved, and the appliances of the electric telegraph were also destroyed.

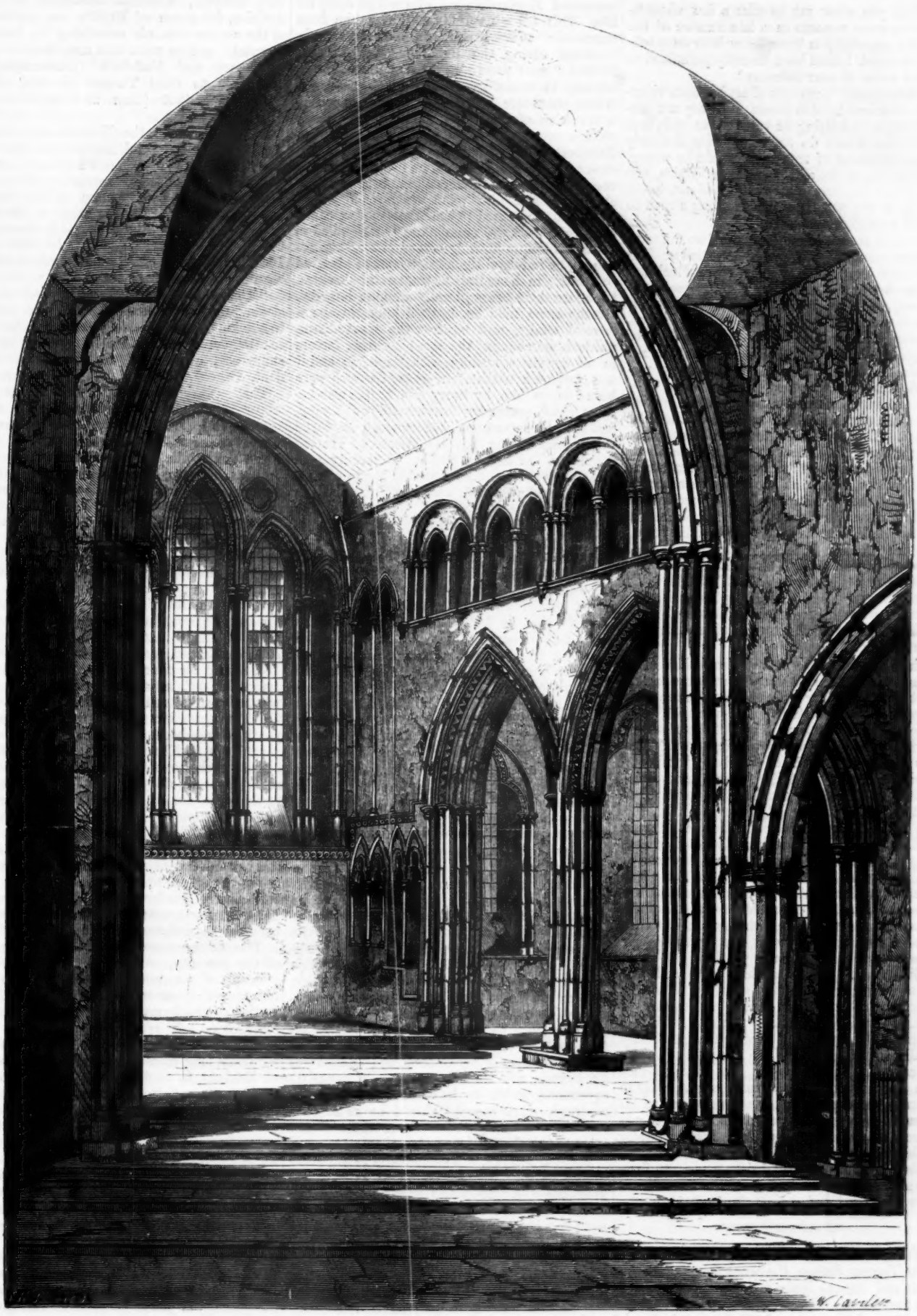
Kirkwall (Orkney Isles).—"In reseating the ancient cathedral of St. Magnus," says a northern contemporary, "the chief difficulty is to supply the requisite accommodation without destroying the appearance of the interior. A plan has been adopted in the case of the Glasgow cathedral, which may not be unworthy the notice of those having before them the various plans for refitting St. Magnus as a place of public worship. At a meeting of the Town Council of that city, on Thursday last, the Lord Provost said that he had the gratification of announcing that it was now resolved that the only screen to be placed at the entrance of the portion of the nave used as a church was one of cloth, which could be dropped during the hours of divine service, and raised till out of sight when not required. The magnificent vista of the nave might thus be seen from end to end at one view."

Jersey.—The monument to the memory of the late Mr. Le Sueur, according to the *Jersey Times*, is at length to be commenced. The committee of subscribers met on Tuesday week, when a letter was read from those who had undertaken the construction of a monument, after what is known as the design of "the lions." In this letter it was stated that they could not now undertake the work at the price agreed upon, the cost of materials and workmanship being of late so much enhanced. The committee then adopted another design submitted to them; after which design the monument is to be erected, by Messrs. Thomas Le Gros and John Le Cras, for 425*l*. sterling. The new contractors were to begin their work in a week or ten days, and are to complete it by the end of the year.

THE CHANCEL OF HYTHE CHURCH.

IN our last volume we gave a view of the Chancel of Westwell Church, one of the most curious examples in the county of Kent. That which we now give, although of equal merit, is of quite a different character. The work at Westwell is of extreme simplicity, while here it is of a more elaborate description.

The church at Hythe stands on a commanding eminence to the north of the town. The work, principally in the style of the 13th century, is externally very plain. The chancel is by far the best portion, the boldly projecting buttresses and lofty narrow windows being its principal features. Internally the church has suffered greatly by modern and tasteless alterations. It would be impossible to say too much as to the ugliness of the ceilings, both in nave and chancel. As will be seen to some extent by our illustration, the chancel is raised some feet above the nave, and under the eastern end there is a fine crypt. The entrance to this is by what has once been a splendid doorway, but it was the pleasure of a late churchwarden to chop off the whole of the arch-mouldings: it is satisfactory



THE CHANCEL OF HYTHE CHURCH.

to know that the archdeacon, on his next visit after the perpetration of the enormity, expressed his great disapprobation of such a proceeding. This crypt is well kept, and its recesses are entirely filled with bones, said to be those of Danes slain in a battle which took place in the neighbourhood. All the detail in the chancel is worth the most attentive examination: it would be difficult to find a greater variety in so small a space, and the whole is in good preservation.

Our minor illustration is of the sedilia and piscina on the south side of the chancel. Their principal peculiarity is in the form of the arch, and in the ornamental band above.

The station at Westenhanger offers no great temptation to the traveller, but if he can make up his mind to leave the train there, he will be repaid by a pleasant walk through a picturesque country, and at the end of it an opportunity of examining one of the best specimens of ecclesiastical architecture in the country.

ECLECTICISM IN ARCHITECTURE.

WILL you allow me to offer a few observations on some remarks in a late number of the *Builder*, especially as these latter bear on a subject on which I have been recently permitted to occupy a few of your columns?

"Eclecticism in matters of art has been vigorously attacked by able minds, and they are probably right in denying its value as an end; but those who would do so, considering it simply as an instrument of transition, would be wrong. Eclecticism, or the amalgamation of styles, will not suffice to form a new style of art, but it will be of the utmost use as affording a road to it, and providing materials."

Now it seems to me there are two different translations of this same word eclecticism. The first is the mere abstract eclecticism, which has for its basis the study of the *expression* of edifices, quite separated from the adoption of their various parts. Sublimity, purity, impressiveness, the several ideal characteristics of Egyptian, Greek, and Gothic architecture, are certainly independent of their respective materialism; or rather, they may be made so—may certainly be tangibly conveyed to the mind by combinations of other and totally dissimilar shapes. Thus we illustrate this: "Let nature be your model, not an artist,"* being set down as a generic axiom; then let one not learned in technicalities, glance at the ancient structures, and, while the impressions of their peculiarities are full upon him, shut his eyes, and shadow forth inwardly how he would subjectively reproduce the dreamy imagery. Such a one, not knowing the stipulated outlines and profiles, the objective peculiarities, but with skill in creation, would be most likely to vivify the vision, and vaguely sketch at first, and afterwards definitely clothe the original fabric he aims to erect.

The second is a more practical eclecticism: it has little to do with abstract sentiments, and is what is generally understood when the term is applied to architecture. You phrase it, "the bringing together the most beautiful portions of previous styles, and even improving them." And it is the more feasible of the two; the other requiring a masterly ability, and a more independent genius; for creation, irrespective of what definitely exists, is, in my opinion, the very highest range of the intellect of human kind. Many would find it facile to blend without any great discord Grecian, Gothic, Saracenic, and Italian details. And this is the great benefit of such attempts, which all must observe who have practically sought to combine the parts of different designs, viz. that it is hardly possible to do so without greatly modifying those parts; and there is no limit to such modifications. They *must* lead to it; and thus the architect, making such efforts, with all the varied expressions, the tangible thoughts of different styles contending the one with the other for the mastery, is forced, in his perplexity to dash at *something*,—like the painter Protogenes, who, in his despair, not having before him an example, and ignorant how materially to express the foam at a dog's mouth, dashed his sponge at the canvas, and lo! the foam was there. These *somethings*, first floating, "airy nothings," in the imagination, will, after all, probably come, as the fabrics of visions, from the accidents by which so many great inventions have been produced. E. L. TARBUCK.

THE CHARTER-HOUSE.†

OF Thomas Sutton, the benevolent founder's, birth and lineage little is known, beyond the fact that he was educated at Eton, and that on the 27th of November, 1551, he matriculated, or entered, at St. John's College, Cambridge. During the reign of Mary, he travelled on the Continent, probably on account of the troubles and discord of the times; and having acquired the knowledge of languages, with great experience, and the accomplishments which were then not attainable in England, he returned, in 1562, to pursue a career in commerce the most successful even in the annals of this city of merchant princes. So early as 1569 he was appointed Master-General of the Ordnance for life. This office naturally withdrew him from mercantile affairs; and while on service in Scotland during the Rebellion, a "*liaison*" formed "*more patriæ*" produced a son, Roger Sutton, to whom he was greatly attached, but whose premature death before his father, caused a revulsion of feeling that seems to have cast a shadow over his life. In 1582 he married Mrs. Elizabeth Dudley, widow of John Dudley, of Stoke Newington, but had no issue. His City residence was at Broken-wharf, between Trig-stairs and Queenhithe; but whenever his affairs permitted, he retired to the Manor-house, Stoke Newington, where, from narratives detailed in his wife's letters (now preserved in the Charter-house), he indulged the natural bent of his mind and heart, in boundless liberality and charities, his house there being literally an open hospital. At the same time he devoted himself to commercial affairs, and became the most distinguished merchant of the age, employing factors in all countries trading with England; and it was said of him that "freights of wealth were borne in to him by every tide." He also became chief contractor for victualling the navy, and actually served in that fleet which destroyed the wreck of the Spanish Armada. Having fitted out the barque *Sutton*, of seventy tons and thirty men, he commanded her in person, and captured a Spanish vessel with cargo valued at 20,000*l*.

After the death of his wife, which occurred at Balsham, in 1602, his noble spirit stood isolated on earth; and about this time he matured the plan which appears to have been the leading object of his existence, to found the noble charity of the Charter-house, and "to give all that he had to feed the poor." His pious intentions were not, however, altogether unknown to his contemporaries, for many and frequent were the attempts made to divert him from his purpose. Sir John Harrington, then high in authority, was most sedulous to procure a succession to his large estates for the Duke of York (afterwards Charles I.). One sentence extracted from a letter in reply to Sir John, will reveal better than lengthened eulogies the true simplicity of heart of the founder. A peerage had been offered as a lure to the proposition. Thomas Sutton writes:—"My minde in my younger times hath ever been free from ambition; and now I am going to my grave, to gape for honours might be accounted mere dotage in me, so unworthie a person." Not of the aristocracy, nor noble by birth, but by nature, he identified himself with the people, to whom he bequeathed his vast wealth; and he framed the ordinances by which, under his will, the institution should be governed. That will and those ordinances constitute the foundation, therefore, as a great public trust, and not a private association (as some assume it to be) to be governed and dispensed by the governors or master *pro tem.* with his actuaries; it is, in the fullest sense, amenable to public scrutiny; and neither its income, nor its management, nor any of its operations, ought to be concealed, but, on the contrary, every account should be as overt as the army or navy estimates, or those of any other national establishment.

There is at present a commission in authority to inquire into the Charter-house, as has been done also with respect to Christ's Hospital, and much and general anxiety is felt and expressed as to the issue of both. There are, however, but too many evidences of errors, faults, and delinquencies, detected by inquisitors appointed after the same fashion in other establishments, which having only met with censure, and mayhap, reproof, have been suffered to rest in the silent record of a blue-book, and still slumber and smoulder on.

As many attempts were made to seize upon the oblation of these estates to charity, so one in particular by the great Sir Francis Bacon, in favour of James I. cannot be omitted—that distinguished, but more than suspect judge, suggested that they should be sequestered to the Crown! And as a last struggle, Mr. Simon Baxter, a near kinsman of the testator, instituted a suit in Chancery to obtain the inheritance. This suit was most signally defeated by a decree of the twelve judges, who adjudicated that the estate should pass by testament. A sacrifice was, however, somehow combined with the decision, for a sum of 10,000*l*. was applied out of the estates towards rebuilding the bridge of Berwick! and to raise that sum, the manors of Littlebury and Hadstock (Cambridgeshire), were sold to Lord Thomas Howard, earl of Suffolk, for that (even at that time) very inadequate price.

In the year 1614, the Charter-house was first opened, and on the 3rd December of that year, there were eighty pensioners and forty scholars, together with officers, servants, &c. on the foundation. The ordinances of the founder were (*in the text*), that *the whole of the funds and income* of the estates should be devoted to the objects of charity; and on the 26th April, 1642, a meeting of the governors fixed the regulations as follows:—

"That there should be admitted as pensioners, only such persons as had been servants to the king, decrepit or old; captains, either by sea or land; men fallen into decay through shipwreck, casualty of fire, or such evil incident, &c.

That no children should be placed there whose parents had any estates in land to leave them, *but only the children of poor men that wanted means to bring them up.*"

Such was the animus and intent of the founder, and so conveyed in trust, with an *obsecration to fidelity* of succeeding governors express as unmistakeable.

For the establishment of a school for forty boys, the sum of 5,000*l*. was bequeathed expressly; and a sum of 40*l*. was limited to be paid with every boy, either to advance him in college, or as an apprentice fee in trade. It is rather significant of the inadequacy of that sum for the purpose, and of the greatly reduced value of money, that we find the exhibitions to college enlarged by the governors, to more than 40*l*. a year for four years; and also that the amount of 40*l*. as an apprentice premium, was wholly useless and insufficient; so much so, that those premiums have been discontinued, no youth having been apprenticed from the school since John P. Kemble was bound apprentice to his uncle, the comedian, to learn the histrionic art! In truth, the 40*l*. in 1611, as compared to the same nominal amount of our currency, may be estimated at 400*l*. or ten times the sum. This calculation ought to be borne out in all the details, for most assuredly the value of the estates has increased tenfold; and yet the gross rental, which was in the year 1691 5,391*l*. averaged for the last six years less than 21,000*l*. representing an increase little exceeding *three times* that amount!

This falling back (for it is nothing less) of the property, arises from some error in the principle of management, is too palpable to require proof: to arrive at correct data without a terrier of the farms and acreage of the lands is impossible. It may, nevertheless, be urged that the mode of leasing for twenty-one years, a custom long disused by the landed proprietors of England, is, of all others, the most likely to lead to depreciation: the term is not long enough to give a biding interest to the tenant, so that he should keep tenements, barns, hovels, gates, &c. of a farm in repair, and it is too long for a cultivating lease on fair reciprocal terms, as the value of land is ever fluctuating: in fact, were fines paid *to the Hospital* (which are not so), the advance could never compensate for losses sure to accrue on surrender of farms in a state of exhaustion, a result certain to arrive, unless renewals should be granted *on the lessee's terms;* but the system is vicious, and the possibility should be avoided (however remote the probability) of *favouritism*, or of *corruption*, in conceding renewals.

Complaints and remonstrances have long been put forward by the pensioners of the pitifulness of their allowance, but little increased since the days of the founder, and invidious comparison made with the splendid provision for the master (1,000*l*. a year salary and allowances, together with a noble mansion and luxurious table). These perturbations were followed by an increase of their dole from 16*l*. to 20*l*.; but whether "post or propter hoc" doth not appear. A pamphlet alluding to this, as lately published by the master, goes to show that the increase

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* Pliny, xxxiv. 19.

† See p. 63, *ante*. In first article, for Humfry de Bohun, "Earl of Harford," read, "Earl of Hereford."

of the estate, however large, involves no right on their part to an increase; but on the contrary, asserts that the governors have the whole discretion and regulation, under the charter of James I. He deplores the spirit of discontent and insubordination, and especially that some bad characters should have intruded there! winding up the whole with the truly Christian resolve that he himself would persevere in teaching and preaching forgiveness and charity, as it was his wont to do.

Forbearance towards calcitrants and recusants, is certainly most commendable; but especially so in cases like this, wherein the master and his colleagues had absolute power to expel.

Important as is the branch of the charity devoted to the Brothers Pensioners, that of the school, limited though it be, is of far greater moment to society: the one with angel beneficence softens the rigours of adversity, by sustaining and cheering the latter years of men descending to the grave; the other imbues the youthful mind with literature, science, and those arts which, advancing and growing in the national family, fructify a hundredfold, and increase and multiply in the ratio of acquirement.

The school is a large building, occupying a large plot of ground (eight acres): it has salaried masters and attendants, and yet it embraces only forty-four boys on the foundation: these boys are not of the class prescribed by the ordinance of 1642 "the children of poor men that wanted means to bring them up:" much less are they such as the founder prescribed, for the sons of the wealthy, the independent, and the distinguished, are of them! Perhaps there are no poor in mighty London.

But there is a greater departure from the testamentary injunction, in the fact that whilst there are only forty-four boys on Thomas Sutton's foundation, there are 130 boys, externs, boarders with the identical masters who are paid on the institution for the education of the 40! The masters, the buildings, the servants, are employed thus for a purpose alien to the founder's objects: either the teachers are too many for the forty, or too few for the 170; but in any case, the school and benefits of the establishment ought not to be surrendered as an object of commerce for the advantage of one or more masters: the funds are ample, even now, reduced though they be, for the sustentation and liberal education of the number limited by will.

Like Christ's Hospital, the Charter-house is now under the supervision of a parliamentary commission; and it is expected and earnestly desired that a searching scrutiny shall be instituted into all the details of control, but above all, into the sources and management of the large estates and incomes hitherto collected and dispensed without question.

The position as well as the nature of both institutions is similar: both are in the very worst possible situation for the education of youth, or for the solace of old age. Smithfield market intervenes between them, about 150 paces only distant from either. The market may be deemed defunct, but it is in contemplation to fix the great central railway terminus on the site. This very fact, while it unfits the more each institution for its purpose, increases exceedingly the value of both as great building centres. The Charter-house occupies 15 acres, which, if sold, would realise 300,000*l.* (and this is not one-fourth part of the value set by the corporation on building sites in the vicinity). Christ's Hospital has 5 acres, besides convertible buildings of great value; and these are worth also little short of 300,000*l.* Both hospitals have extensive and widely-spread freehold estates, lands producing (if one may judge from the acreage rental) little beyond 10s. an acre! Some of the farms are let at less than even that rent: both have most eligible lands near the metropolis. Surely then, seeing the advantages of a large scope of land for educational purposes; seeing that for one-half the amount to be realised by the sale and dedication to commercial purposes of the City sites, buildings of a magnificent character, with glorious grounds, in every way suited to such hospitals, might be erected; no man of common sense or common prudence would hesitate to sell out, and to remove from the worse to the better situation. The brothers might then adopt the motto, "Deus nobis hæc otia fecit."

No argument is necessary to prove the baneful influence of a metropolis or even of a great town upon a college or school. The same holds with regard to a refuge and retirement for the aged; and when the concentric railways pour their torrents in upon Smithfield-bars, those regions will not be better adapted for seats of learning, nor for academic groves.

Respecting the accounts and income of the hospital, so far as they have erred into light, little need be said beyond the fact, that no balance at Bank, no reserve or sinking-fund (at least of any consideration) has been made, either to meet contingent demands or the requirements so sure to arise for renewed or restored buildings! A small per centage (say 3 or 5 per cent.) would soon have made an immense sum. No, the income is said to have been expended, the trust being to apply it in totality and trust to the charity. Private estates so managed would soon dwindle. Farms out of heart, premises out of repair, and landlords out at the elbows! The adage of charity is true—that it covereth.

QUONDAM.

THE GREAT BELL OF ST. PAUL'S, LONDON.

WE have much pleasure in giving the information desired by your correspondent Mr. Wylson, relative to the weight and size of St. Paul's great bell, which was made at this foundry by our predecessor, Richard Phelps, in 1709. Its dimensions are: diameter, 6 feet 9½ inches; height to top of crown, 6 feet 4½ inches; thickness at sound bow, 5¼ inches; weight, 5 tons 4 cwt. We have a portion of the agreement made between the dean and chapter of St. Paul's and Mr. Phelps, dated July 8th, 1709, in which it is stipulated that the hour-bell and quarters should be delivered at the cathedral by the 1st of October in the same year.

As it may perhaps be interesting to some of your readers, we send you the dimensions and weights of the other large bells made by us, viz. Lincoln,—cast, 1834; diameter, 6 feet 10½ inches; height, 6 feet 5 inches to the top of crown; thickness at sound bow, 6 inches; weight, 5 tons 8 cwt. York, St. Peter's—diameter, 8 feet 4 inches; height, 7 feet 10 inches; thickness, 8 inches; weight, 10 tons 15 cwt. One for the Cathedral of Notre Dame, at Montreal,—diameter, 7 feet 3 inches; height, 6 feet 8½ inches; thickness, 6¾ inches; weight, 7 tons. Another for the same place, diameter, 8 feet 7 inches; height, 8 feet 1 inch; thickness, 8¼ inches; weight, 12 tons 15 cwt. This last is the largest that has been made in England up to the present time, we believe.

CHAS. AND GEO. MEARS.

ARCHITECTS' BENEVOLENT SOCIETY.

THE general meeting of the subscribers took place on Wednesday, the 7th inst. in the rooms of the Royal Institute of British Architects. Mr. Sydney Smirke, A.R.A. the President, was chairman on the occasion, and read the report of the council, which contained the following passages:—

"It has long been a project, which they have much at heart, to suggest the appointment, at all the largest provincial towns, of local committees to advise and assist in the administration of the funds at their disposal; but this course can only with propriety be adopted when a willingness has been shown to co-operate with us.

With all sincerity and earnestness therefore, the council call upon their country friends to consider our claims, and no longer to withhold their assistance. We might urge upon their notice that no distinction has ever been made by the council in selecting objects for the Society's aid: at least one-fifth of those who have received assistance, have been professional men resident in the country, or their families.

The council is happy to perceive no backwardness in this respect on the part of professional gentlemen in London. The list of the Society's members now embraces nearly every distinguished name, and the continued favour of the Royal Institute of British Architects, in permitting us to use their rooms for our meetings, may well be regarded as satisfactory evidence of the approval of the whole profession.

The Council cannot omit to state here, that since the closing of the balance-sheet our eminent member and trustee, Sir C. Barry, has forwarded a donation of 10*l.* as an earnest of his goodwill. A donation of 10*l.* 10s. has also been just received from Mr. Reeks; also donations have been received of 5*l.* 5s. from Mr. Booth, 5*l.* 5s. from Mr. Mocatta, 5*l.* 5s. from Mr. Mair, and 3*l.* 3s. from Mr. M. D. Wyatt, which are all sums in addition to their former liberal contributions.

The members of the society, however, are still entreated to recollect its infant condition, and not to relax in their endeavours to promote its welfare by giving a wider extension to the knowledge of its objects and of its results. The enormous demands of a great war have a depressing influence, which falls with peculiar severity on those whose professional success is founded on the cultivation of arts which need to be nurtured by Peace, and which derive their supplies from the exuberance of domestic prosperity; and already the council have had painful evidence of its effects upon our own art.

The Council have reason to fear that an impression still remains in the minds of some, that there is something derogatory to our profession in the existence of this society. Surely a most erroneous impression! Is our art less exposed to the vicissitudes of fortune than the sister arts? Is a *literary*, or a *legal*, or a *medical* career more subject to reverses than our own?

Yet all these classes, to their honour be it said, have their peculiar institutions not distinguishable from our own, either in their object, or in the means of attaining it."

The sum of 187*l.* 10s. has been distributed to applicants during the year. The balance at banker's is 107*l.* 1s. and the sum invested is 535*l.* 6s. 5d.

Mr. Mocatta, Mr. Hakewill, Mr. Scoles, Mr. Poynter, Mr. Edwin Nash, Mr. Baker, Mr. C. C. Nelson, Mr. Malliphant, Mr. Brandon, Mr. Dobson, Mr. Leicester, Mr. Ferrey, Mr. Sancton Wood, Mr. Hodson, and others, took part in the proceedings and business of the society, and manifested the most kindly interest in its well doing.

Mr. John Turner, the honorary secretary, was duly thanked for his exertions.

THE INSTITUTE OF BRITISH ARCHITECTS AND THE HEALTH BILL.

AT a special meeting of the Institute, convened for the purpose of considering this Bill, resolutions were come to,—1st. That a Health Bill was desirable for the protection of her Majesty's subjects. 2ndly. That a committee should be formed to draw up a petition to both Houses of Parliament against the one now proposed becoming a law in its present state. It was stated that Sir Benjamin Hall had removed many of the objectionable clauses, leaving with local boards the power of making bye-laws, but this, it was thought, would simply tend to place the matter in a worse position, and was open to the most serious opposition.

WAR APPLIANCES.

THE two newly-appointed sanitary commissioners, Dr. John Sutherland for Balaklava, and Dr. Gavin for Scutari Hospital, are now on their way to the East, together with Mr. R. Rawlinson, C.E. as the general organizer of the sanitary labour required by his colleagues. Mr. Newlands, the Liverpool borough engineer, together with Messrs. Ainsley, Freeney, and Wilson, of the staff of Messrs. Fresh, of Liverpool, have also left as a sanitary staff along with their chiefs, so that a sanitary brigade will at once be formed wherever our army or its sick and wounded may require their services.——At Paisley, a number of unemployed weavers have offered their services to Government, as militiamen, for five years, or to the close of the war, on condition of each receiving fifty acres of land, in Canada, Australia, or New Zealand. This is suggestive, so far as regards a want of men. As we have before said, however, the virtual strength of our army might be multiplied at least fourfold by available war appliances alone, without additional men beyond a certain moderate number. We recollect of more than one instance in the present war, where possession of a revolver or two, for example, enabled an officer to dispose of four or five Russians in rapid succession, or in other words, to do the work of four or five additional men. Would it not be cheaper then, and in every respect better, to send to the Crimea one revolving rifle, or pistol, rather than two, or even three men? or, to sum up the result, 10,000 revolvers in place of 25,000 or 30,000 men? Of course, revolvers are of no use without men; but we mean that beyond the available number of men (and sanitary rules and common sense being observed), our army might thus and in various other ways be, at the very least, tripled or quadrupled. Thus, as we before suggested, why should not the life of *every individual soldier* in our army be protected at all events from rifle, musket, or pistol bullets, or even from bayonet, sword, or lance thrusts, by some light proof armour over the vital organs in front while facing the enemy? We have much gratification in observing it stated by the Paris correspondent of the *Morning Herald*, that the French Emperor has ordered 12,000 cuirasses, and as many helmets, for the division of his army, which is to storm the city of Sebastopol. The

armour is said to be on a new principle, and extremely light in construction.——A trial of a newly-invented self-breech-loading and priming carbine has been made at the School of Musketry at Hythe. *Sixty* shots, it is positively declared, can be fired from this weapon in seven minutes: out of that number, at a range of 100 yards, forty-seven are said to have struck the bull's-eye.——The *four* old contractors in Birmingham for military small arms supplied 10,000 Minié rifles from 1st December last to 17th ult. Other thousands were then also on the way to completion. A new rifle, too, the Pritchett, said to be superior to the Minié, is on trial.——Our foes, meanwhile, are not idle. In consequence of the departure from Russia of foreign engineers and workmen, several manufacturing establishments in that country have lately sent agents, it appears, to Konigsberg to procure workmen by offering very high rates of wages.——Improvements in the weightier implements of war, too, are ever turning up among the numberless new inventions of engines of destruction to which the war has given birth. One much talked of at present in the scientific world of Paris is a shell invented by M. Chaslin, which he asserts will not only double the force of the powder used, but, being without a match, will have the inestimable advantage of falling on the spot desired without giving notice to the enemy by that stream of light in the air which accompanies the present shell.——Mr. Murdoch, of the *Sanspareil*, has performed the operation of "bouching" (or fitting new vents into guns) on several large pieces of ordnance in the trenches. Thus instead of a piece of useless metal, in a few hours there is a gun as good as new, and ready for instant use. It unfortunately happened that a Russian spy was actually allowed quietly to look on while Mr. Murdoch was instructing some of our own military engineers in this useful art, and then to saunter off in the direction of Sebastopol, towards which he bolted, and which he safely reached, in the midst of a shower of shot! Here was one most useful invention and advantage virtually lost to us almost in a single instant!——The Mersey Steel and Iron Company lately completed a contract for 160 tons of iron plates for Government, to be used in the construction of the gun-boats for the Baltic. These plates are 12 feet long, 4¼ inches thick, and 2 feet 10¼ inches wide. Each plate weighs 2 tons 13 cwt. and they are all finished and planed on the edges. The plates were made at the rate of 40 tons a week. Several of these gun-boats, or iron batteries, are ready, it appears, or at least upon the list of "a hundred pennants" destined for the Baltic, but not a whisper is uttered yet as to the destination of any of them being the Black Sea. We now hear, however, that Mr. Nasmyth's wrought iron ordnance *was* destined, partly, at least, for these floating batteries; but can it be possible, as alleged, that "General Routine" has interfered with Mr. Nasmyth's progress, and that his labours have been suspended? It appears that some years since Lieut.-colonel Simmons of the Royal Engineers, strongly recommended the formation of wrought iron guns; that a Woolwich committee reported to the Ordnance Board that this was an old invention; and that wrought iron was too soft. Col. Simmons is said to have then placed before the committee two specimens of wrought iron, one as soft almost as timber, and another hard enough to cut a diamond, and he very naturally asked which of these materials they meant, when they reported that wrought iron was too soft. Nevertheless, nothing appears to have come of this endeavour till Mr. Nasmyth was called in, and now again we appear to be as far off as ever from the attainment of what seems so desirable.——The metal ordinarily employed in the casting of cannon not having been found suitable for the Lancaster guns, Messrs. Krupp, of the ironworks of Essen, in Rhenish Prussia, are reported to have made a Lancaster gun of *cast-steel*, and sent it to Woolwich to have it experimented on. Before being bored, it weighed about 7,000 lbs.——Mr. W. Austin has, it appears, submitted to the French Emperor, and also to our own Government, a new kind of land battery and revolving floating batteries, capable of resisting shot, shell, and red-hot shot. These inventions are believed to be now under consideration. The same gentleman proposes a thin metallic covering for tents, and for ground beds, &c.; but the Ordnance, while admitting its suitability in other respects, object to the weight (½ lb. per foot), as more than army regulations would allow. Waterproof materials, however, could be readily made of the very lightest weight that could be desired; and why canvas or linen tents should ever be made without being waterproofed, it is difficult to imagine. Similar material might be laid on damp ground within the tents.——Another of our correspondents, Mr. John Elliot, of Southampton, architect, has forwarded to Lord Panmure the details of a rough-and-ready railway, or tram-road rather, which might be of great use and easy formation for temporary or other purposes in war, and although our navvies are pushing on with admirable efforts the formation of the "Balaclava and Sebastopol Direct," and are even contemplating, or at least talking of another "little surprise" for the new Czar, in the shape of what he will doubtless regard as rather an impudent scheme for a "Crimean Central" line,—still we hope that due consideration will be given to Mr. Elliot's plan, which simply consists of a cargo of 12 feet ordinary deals, some of which are to be cut into three pieces, and bolted together, the middle piece being shorter than the others, so as to form a chair, into which, when sunk in the ground, the ends of the 12-feet deals are to be slipped, when a tramway may thus be made, of say six or seven miles, by a sufficient number of soldiers, in twenty-four hours. Trucks on similar simple principles, with deals planed and put together so as to form small rollers, to cross over the tramway, in place of wheels, with simple triangular iron plates bolted on the track sides for axle plates, complete the whole apparatus, the precise details, measurements, and plans of which Mr. Elliot has given, as well as the cost of the whole line, which he estimates at some 2,550*l*.

COMPETITIONS.

OXFORD MUSEUM.

BEING at a loss to understand the hesitation of the delegacy in announcing their decision as to the prizes, I thought it right to apply to the secretary for an explanation. This has been immediately and courteously given, and is to the effect that the delegacy have determined to wait until the contract for the selected design be accepted (or otherwise) by convocation. As this intelligence will interest many of your readers, I forward it to you for insertion if you think fit. A MEMBER OF THE FIRST SIX.

TOXTETH-PARK CEMETERY.

The burial board has decided on the plans of Mr. Barry, of Liverpool, for the chapels and lodges for the Toxteth-park cemetery, and on those of Mr. Gay, of Bradford, for laying out the ground, drainage, &c.

BRECHIN.

The designs of Messrs. Hay, of Liverpool, architects, have been selected for the erection of a new free church here.

BELPER.

The premium for the People's Institute, Belper, has been awarded to Messrs. Mason and Layland, architects, Liverpool. The style adopted is Elizabethan.

OXFORD ARCHITECTURAL SOCIETY.

THE second terminal meeting of this society was held February 28th. The president introduced the subject of "The Application of Colour to Mediæval Sculpture" to the meeting, and called on Mr. Lygon (secretary) to commence the discussion.

Mr. Lygon, according to the local journals, said he was not disposed to call in question a judicious application of polychrome, but objected to an indiscriminate profusion of colour. Quoting from Mr. Ruskin's "Seven Lamps," that "sculpture is the representation of an idea, while architecture itself is a real thing: the idea may be left colourless, but a reality ought to have reality in all its attributes, its colour as fixed as its form,"—he would substitute *must* for *may*, and accept this as a sound principle.

Mr. Street said that he could not agree as to the objection to colour on sculpture. In old examples it was universal in its application, and generally under two rules,—the first that of giving distinctness at a distance; the second, that of producing more exact resemblance to designs represented. Of the first rule the ordinary mode of painting foliage with gold on a red ground was an example; and of the same rule some fragments of ancient colour in alabaster, which he was able to exhibit to the meeting, were remarkable examples: here colour or gold was only used for the hair, the edges of draperies, and the linings of vestments and their diapers, giving marvellous distinctness to the forms of the sculpture.

Mr. Parker said that beyond all doubt every thing inside a mediæval building was coloured, in a complete system: there was no doubt, therefore, that sculpture was treated as a part of the whole. So far were the mediæval artists from fearing to lose the fineness of chiselling, that they covered the figure with a paste before colouring it; as in the tomb of Lady de Montsente at Christ Church. Whether colour was used outside buildings was still a question: he did not himself see proof of it.

Mr. Freeman could not conceive how you were to paint an idea on the representation of an idea. Mr. Lygon had said that all precedent was drawn from debased examples, and though it had been proved that colour was used in the earliest sculptures, he must protest even in Mr. Lygon's absence against the abuse heaped on Perpendicular architecture. He demanded tolerance in matters of taste where no moral obliquity was exhibited, and objected to such terms as "unspiritual bombast" to Perpendicular art. He thought it absurd to exclude colour from representations of animate objects, when applied to everything else; and thought a complete system of colour enhanced the beauty of every building.

Mr. Meyrick agreed in the main with Mr. Freeman. He did not think that pure form could be used in conjunction with united form and colour without a disagreeable result. He wished to ask what objection there was to papering interiors of churches? He thought it reasonable, where paint would be too expensive, to use the best means of producing the required effect.

CAMBRIDGE ARCHITECTURAL SOCIETY.

THE second meeting for the Lent Term was held on Feb. 23rd, when Mr. W. Lloyd Jones, of Emmanuel College, read a paper on the Ecclesiology of the Isle of Man, containing much information on the Runic Crosses which abound in the island. Mr. S. Baring Gould, the junior secretary, read a paper on Mediæval Symbolism, especially with reference to King's College Chapel. The Rev. W. M. Campion made some remarks on the subject of Mediæval Symbolism; after which it turned upon the rose and Virgin's head at the west end of King's College Chapel, and it was suggested that it might have been the badge of Catherine Parr and Henry VIII. the stone having been left in the rough till after the roof was completed, which would allow for the lateness of date attributed to it.

LONDON-WALL, LUDGATE-HILL.

IN the course of further excavations for the works of the Milton Club, part of an ancient arch (about 9 feet 10 in. to the soffit), has been exposed since our notice appeared. The wall, we should have said, is formed mainly of chalk. The works for the new Club are being performed under the direction of Mr. W. Wright, architect, by Messrs. Ashby and Sons, and have been of a difficult character. The walls have been taken down and reinstated, without removing the floors and roof.

SHOREHAM HARBOUR WORKS.

A CORRESPONDENT enables us to add some particulars to our notice of the preliminary opening of the new ship canal at Shoreham Harbour.

The chief difficulty arose from the treacherous nature of the substratum upon which the entrance lock is built, and the great influx of water through the bottom of the lock pit. The water was kept down by one of Appold's pumps, which, making 600 revolutions, threw 1,300 gallons per minute to a maximum height of 27 feet, and the faulty substratum was rendered secure by sheet piling and concrete.

The engineer to whom the construction of the excavation and embankment of the canal was entrusted was Mr. J. Sewell, late of Brighton. The subsequent works, comprising the entrance lock, the basin, and the quays, were placed under the charge of Mr. E. Leader Williams, Jun. C.E. his father, Mr. E. L. Williams, of Worcester, acting as consulting engineer.

NEW PUBLIC BUILDINGS AT DUNDEE.

WITHIN the last two years this town has taken a stride in the acquisition of public buildings; three of the largest and most ornate of which Dundee can boast having been undertaken within that time. We refer to the New Infirmary, the Royal Exchange, and St. Paul's Episcopal Church on the Castle-hill, the first now all but completed, and the others more or less advanced. The following remarks on these are given on the authority of the *Northern Warder*:—The style of the infirmary is Tudor. The plan takes the form of the letter H. The household apartments, &c. are placed in the central wing, while the wards, stairs, &c. are extended into the wings on either side of the centre. The stairs, which should be unusually easy of access, are said to have been constructed as if for the purpose of breaking people's legs, and the kitchen is described as so poorly lighted by four "boles" up at the ceiling, that for half the year gaslight will be indispensable. The want of special provision for warming and ventilating, beyond what ordinary fireplaces and open windows furnish, is objected to, as quite inadequate to provide an equal diffusion of temperature throughout the wards. The architectural character of the building is said to be still more unsatisfactory. Apart from its extravagant size, and consequent cost, a heavy outlay, it is said, has been put upon portions not having even architectural propriety to justify them, while sound and durable construction has been elsewhere neglected.

The battlements all round the roof are held to be utterly indefensible on this ground; giving to the building an opposite character from that it should possess; necessitating lead gutters behind them, an endless source of trouble in winter; and swallowing up a deal of money, which would have been better spent in procuring corner-stones something larger in size and better in quality than those used—in providing a few more fireplaces—or making sightly doors internally. These, however, are regarded as minor points, which must not be held to interfere with the critic's good opinion of the edifice, as a well-arranged and commodious structure.——Of the Royal Exchange, says the writer, we are hardly in a position to speak, until it be farther advanced: the unfortunate settlement of its foundations, the effects of which seem to be still spreading higher up the building, entitle the promoters of this elaborate building to the most favourable consideration for their work, and half-finished productions cannot of course be justly criticised.——St. Paul's Episcopal Church is regarded as decidedly the most promising addition to the public buildings of Dundee. Had it occupied a proper site, this church would have been a model of the revived Gothic architecture of the day; and as it is, it will be in many respects an edifice to boast of. The spire, completed the other week, rises to a height of about 220 feet, surmounting a tower of large dimensions, and excellent design,—almost wholly inappreciable, however, from its awkward site. The spire will appear to many as too broad at the base for its altitude; but this is not the case. In plan, the Episcopal Church consists of a nave, with side aisles, transept, and choir, with side chapels, terminating in a semi-octagonal apse at the *south* end, as we have been accustomed to call it, or the *east*, as it is wished to be called. This apse is to be groined in stone, and the windows are to be filled with stained glass. The other roofs are open to the ridge, the timbers stained and plastered between, with scrolls illuminated upon the plaster. The lofty piers and arches, the tall traceried windows, and the whole proportions of the interior admirably realise the upward, vertical spirit of Gothic architecture, and cannot fail to be strikingly effective. The style adopted is Decorated Gothic, early in the period. The Chapter-house at York has furnished much of the details. The architect is Mr. Scott, of London. The contractor is Mr. W. Cooper, of this place. It is expected the church will be consecrated early in autumn.

Notices of Books.

The Best Site for Trinity College Church (Edinburgh), &c. Printed for the Author by W. Burness: Edinburgh, 1855.

THIS is a folio volume of 140 pages, on "The Best Site for Trinity College Church; with Ten Years' Discussion on the Subject; and Seven Lithographs, illustrative of the Science of City Building," by Mr. R. F. Gourlay, a veteran promoter of "city building," or rather, of city improvement or rebuilding, especially with reference to Edinburgh, but on principles, he urges, applicable to cities or towns in general. The work is "respectfully submitted to his Royal Highness Prince Albert." It advocates the re-erection of the much talked of church alluded to, in connection with other and collateral improvements, in a district certainly much needing improvement, both municipal and moral, as well as sanitary, namely, amongst the wretched class of buildings lying between the North-bridge and Leith Wynd, that is eastward of the bridge, and in a space long known as "Ireland's Woodyard." The very reasons why others object to such a site, namely, its sunk and wretched condition, are adduced in favour of its selection by the present author, who appears also to keep in view what others have lost sight of altogether,—that there was a parish attached to the old church where it formerly stood, not far from the site now indicated; and the proposed site for its re-erection is within the limits of its own parish, while other and more favourite sites suggested are actually out of that parish altogether. Mr. Gourlay suggests in this work the formation of a Joint Stock Association, in connection with his scheme for the improvement of the locality in question, as well as for that of the city at large, and he specially keeps in view the erection of improved dwellings for the poorer classes, to which end he himself proposes, on certain conditions, to contribute 500*l.* as part of the joint stock.

The Bank of Scotland directors, we understand, have of late been consulting Mr. Bryce, architect, regarding a plan for opening up the whole of the ground between their bank and the High-street, including a site for this church. The East Princes-street Garden, is said to be the favourite site for it with the public.

Miscellanea.

INKERMANN was called Theodorus up to 1475, when the Turks gave it its present designation, from *In*, cavern, and *Kerman*, fortress. An article in *Bentley's Miscellany* gives some interesting particulars of its antiquities. The cliffs below the fortress of Eupatorium, afterwards Theodorus, and those on the opposite side of the valley where the hill is tunnelled, are completely dotted over with excavated grottoes of various shapes and sizes, and which have been applied to different uses by different possessors. The observations and researches of De Montpereux fully establish the fact that these mountain caves, from whence Inkerman derives its name, were the work of the Tauro-Scythians, and existed before the Heraclean colonists of Khersonesus called on Mithridates for assistance against the aborigines, who are called Tauri by many writers. We find many remains of early Christian times in these caves of Inkerman. Among these remains are those of two churches and a monastery, one on the Inkerman, the other on the Sebastopol side of the ravine. There is nothing remarkable in their construction as works of art. The Rev. Mr. Elliott described scraps of fresco painting and the remains of sarcophagi as yet discernible in several of these caverns in his time. Strange it is to think that these fortresses, rock monasteries, and subterranean churches, these caverned dwellings, and sepulchral grottoes, and this valley, with its dark fishy stream below, once the scene of struggle between Hellenic Greeks and Tauro-Scythians; between Byzantine Greeks and Goths; between Goths and Alains, and Huns, and Khazars, and Komans, and other Asiatic hordes, and the place of refuge of early Christians of various denominations, Gothic, Alain, and Greek, should be now the frontier line of battle between Great Britain, France, and Turkey, and Russia!

THE CLOSED GRAVEYARDS.—Your article, "Young Mortality amongst the London Graves," will draw the attention of your readers who reside in their neighbourhoods to their neglected state, and to the moral obligation due to these consecrated spots, where the mortal remains of their relations and old friends are deposited. I live in the neighbourhood of one of these burial-grounds, and from the back of the house I have a full view of it, and I have observed that since it was closed for burial purposes it is partly used as a receiving place for mourning coaches, workhouse vans, and other vehicles, without any regard to its original purpose; and this appropriation has been placed on a permanent footing by the erection of a timber building extending some yards into the ground, which was cleared for the occasion by the levelling of graves and rooting up of trees. These acts are much talked of and censured in the neighbourhood, and your assistance in exposing the desecration will lead to the correction of such abuses, and the protection and due veneration of the London graves.—A TYBURNIAN.

ZINC FLUES, TUBES, AND CHIMNEY-POTS.—Schedule F, page 145, Metropolitan Buildings Act, shows the regulations and restrictions to be observed, and directs how, and the peculiar mode in which, zinc flues, exceeding "*four feet*" in height, shall be fixed, that is, two feet into solid brickwork of flue, and is clearly an operation under the Act. The Act, in addition, section XIII. makes either the cutting into, or altering of any flue, without notice, an offence under the Act, making the whole liable to be pulled down and abated as a nuisance, and directing for the recovery of a treble fee, and a 20*l.* penalty for such default. If these restrictions and regulations are not put in force, it must be obvious that the public safety will be endangered, which with every half-gale of wind will be the case, as these flues are being put up in the most insecure way, and, in a great many cases, without the requirements of the Act being met.—LEX.

FORGED NAMES TO SUBSCRIPTION LISTS.—We have received a letter from the Rev. H. T. Ellacombe, complaining of grievous annoyance which he has experienced, in consequence of some person forging his name to a printed order for a subscription copy of a certain work. So deliberately would the forgery appear to have been committed, that even Mr. Ellacombe's personal friends saw a resemblance in it to his autograph. It would also appear that a gentleman in Exeter has been annoyed in a similar way in connection with the same book. Mr. Ellacombe's denial of its authenticity is sufficient evidence to our minds, and to all who know him, that the signature in question must be a forgery. The circumstance should be investigated by the author of the book.

CHELMSFORD WATER WORKS: WELL AND ENGINE.—This undertaking has now been completed, after eighteen months' incessant labour to procure water by Artesian boring, and to erect the machinery necessary to supply the town. The Artesian well is now 270 feet deep. Mr. Fenton was the engineer, and Mr. Baker the well-sinker. Difficulties arose from the bursts of sand into the well, and above seventy cart-loads have been thrown up by the pumps and engine, and carted away. The supply has now reached 100 gallons per minute, with every prospect, we hear, of an increase. The well has been sunk 80 feet more than was originally contemplated. The main is connected with the pump, so as to raise the water to the reservoir when it is clear; and a 12-inch iron pipe will be placed so that the pump will take the water as it rises from the mouth of the pipe. The engines are Gilbert's Patent Double Cylinder, and have several peculiarities with a view to save room, fuel, and cost. A pair of these engines were procured from London, each of twenty-horse power, and each capable of delivering 200 gallons per minute. The total cost is estimated at 700*l.* for the well, 200*l.* for the iron cylinders, 200*l.* for the engine-turn, &c.; and 1,700*l.* for two engines, set of three pumps, and two boilers, besides the pipes round the town.

MR. C. R. SMITH'S COLLECTION.—The *Literary Gazette* of last week contains letters from Mr. Thomas Wright, the Rev. Henry Christmas, Mr. Collingwood Bruce, and others, urging the trustees of the British Museum to purchase Mr. Roach Smith's collection of London Antiquities, at the price which has been named for it, namely, 3,000*l.* The desirability of preventing its distribution cannot be questioned. If the Museum will not buy it, the City should.

THE ORDNANCE ESTIMATES.—These estimates for the ensuing financial year amount to 7,801,042*l.* being an increase of 1,821,380*l.* on the past year. The principal increase is of course for stores for land and sea service, 1,033,000*l.* but there are heavy sums for building works. These include an item of 30,000*l.* for the defences of Dover and the coast of Kent; 60,000*l.* for a new barrack at the western heights of Dover; 48,170*l.* for improving the fortifications of the Channel Islands; 24,163*l.* for new barracks at Devonport; 39,047*l.* for additional barracks at Cambridge; 61,000*l.* for barracks at Gosport; 10,000*l.* for the defences of the coast of Sussex; 48,597*l.* for the defence of commercial harbours; and 250,000*l.* for new barracks at Aldershot. These sums are only those required for the year, and by no means represent the gross total expense, which will have to be provided for hereafter. There are numerous items of sums required for the erection of forts and batteries. The amount required for works and buildings at home is thus divided, viz.—295,215*l.* for fortifications, 109,999*l.* for civil buildings, and 623,624*l.* for barracks. The charge for the scientific branch includes 12?,000*l.* for surveys in the United Kingdom, and 6,109*l.* for the establishment at Chatham for instructing engineers, &c.

AUSTRALIAN RAILWAYS.—It is said to be the intention of Mr. Stephenson to pay a visit to Melbourne, immediately after his return from Canada. This visit, it is stated, has been prompted by several of the largest English railway contractors, who are prepared, if Mr. Stephenson's report should prove favourable, to undertake the enterprise of providing railways for Victoria.

STARTING OF A NEW BLOOMING MACHINE.—A new "patent squeezer" has been erected at the Ebbw Vale Ironworks. It is the invention of a Mr. Jeremiah Brown, a Welshman, and is declared to be the best machine yet invented for blooming iron. The workmen call it "Jerry Brown." It is very ponderous, but moves, it is said, apparently with the ease of a lady's crimping machine. It bolts red-hot balls with as much ease as the workmen are said to do "Old Parr's Pills," and speedily converts them into bars 17 inches long and 7 inches thick.

VALUE OF LAND IN THE CITY.—Sir: Finding in your publication of March 3rd, p. 97, a statement respecting "the plot of ground at the north-east corner of Threadneedle-street and Finch-lane, belonging to Mr. Alderman Moon, the present Lord Mayor, which, report says, has been recently let at a ground-rent of 1,000*l.* per annum," I beg to assure you that such report is incorrect, as the ground has not been, up to the present moment, let to any party whatever.

Yours faithfully,

Mansion House. FRAS. GRAHAM MOON.

Mr. Barber Beaumont, on the part of Messrs. Savory, requests us to say, with regard to their land in Cornhill, partly sold to the County Fire Office, that they do not hold it at a ground-rent, but have purchased the freehold. This, however, does not interfere with our statement as to value, but serves to confirm it; for the land has been purchased by Messrs. Savory, at the rate of 470,000*l.* per acre,—*exactly* the sum we named.

DOWN DRAUGHTS.—I have generally found the cause to arise from the flues at the apertures being all on one level, the usual consequence of which is, on the smoke ascending a flue, the down draught or "suction" from the adjoining flues causes the smoke to descend, which is partly owing to the door or window being often open, causing, as it were, a syphon to draw in the smoke. The following is a remedy I have often used with success:—A good well-fitted register-flap to the fire-places or grates of the rooms not in use, or where no fire is made (for it is in those rooms it usually occurs), with an Arnott's ventilator in the flue, communicating as nearly as possible on a level with the ceiling of the room. Also place pots of an irregular height on the stacks, or where these are objected to on account of the appearance, I have used a cylinder of sheet-iron or terra-metallic about 2 feet in length, with a flange in the centre to rest on the top of chimney-stack, so that about 1 foot is fixed above the stack, and the other part in the flue. The smoke is thus carried sufficiently high above the adjoining flues to permit of a current of air between them and the smoke, which will prevent any down draughts.—W. S.

LIVERPOOL ARCHITECTURAL SOCIETY.—Touching a letter from "A Member," in our last, commenting, amongst other things, on the ungenerous observations on a number of this journal made by another member of the Liverpool Society, and accusing the latter of a "disregard for truth," we have received from the gentleman commented on, a report in a local paper, of what he said, with a request that we should publish it to confute the charge. We do not intend to do so, and it would surely not serve his purpose if we did, seeing that while professing to give an account of the contents of a number, in order to show that these were of too general a character, not sufficiently professional, he actually omitted mention of the principal articles in it, such as "County and Parochial Assessment," Professor Donaldson's "Account of the New Works in Paris," "Flow of Water through Pipes," "Architectural Literature in Germany," &c. &c. We are not about to enter into any explanation of the course pursued in the management of this paper. It has obtained for architecture and architects, buildings and builders, a larger public than they had theretofore enjoyed, and has given us, in return for earnest and honest effort, a strong answer to those whose views may differ from us on the subject,—namely, success. We have received statements from some of the principal members of the society repudiating participation in the remarks made, but it is unnecessary to insert them.

THE LATE MR. MACKENZIE'S WORKS.—We are asked to mention that the sale of the collection of the late Mr. Frederick Mackenzie, an artist well known to the admirers of architectural design, will shortly take place. It consists of a large number of Mr. Mackenzie's sketches, distinguished by his peculiar accuracy and material faithfulness, rendering them alike useful as studies to the young architect, and interesting to the admirer of fine art. It includes likewise an assortment of books, etchings, and fine impressions of choice engravings. The professional labours of Mr. Mackenzie not having proved sufficiently remunerative to provide satisfactorily for his surviving family, a subscription has been promoted by a few friends; and, in addition to this, several members of the Society of Painters in Water-Colours, and others of his professional brethren, are kindly contributing drawings and sketches intended to be disposed of by art-union, for the benefit of the family. Cordially sympathising in these kind exertions, we shall feel gratified if this notice should prove a further recommendation to the cause in which they are exerted.

WINE CELLARS.—"A Wine Merchant of Forty Years' Experience," writing to the *Times*, says, "Most houses that were built before the present century have much better cellars for the keeping and improvement of wines than those erected within the last fifty years. There would be a great improvement in the enjoyment of wine if our eminent architects and builders were to direct more attention to building wine cellars.

POWER OVER TOMBSTONES.—May I ask, through your valuable journal, whether a layman, who claims and holds the freehold of the parish churchyard of Waterfall, Staffordshire, can prevent any person from placing a fitting tombstone in the churchyard, to mark the should-be resting-place of a dear father or a friend, paying the usual, or any reasonable fee, for tombstones are (at the present time) rearing up in fields, and stables, disgusting a civilized community? If in the dark ages men had such tyrannical powers given to them, surely they do not retain them in the nineteenth century. If they do, I hope you will use your powerful pen to bring about a better state of things, before the hangers-on of the Church *hang the Church*, as most assuredly they will do, if they are allowed much longer plenty of rope.—T. R.

WEST'S SNOW CART.—Not discouraged by the doubt we hinted, in our notice of the cart invented by Mr. West, for the removal of snow from the streets, the inventor put himself to work, and has made an entirely fresh arrangement, wherein the melting surface occupies a much greater portion of the cart. Whether or not the right thing is even yet quite achieved we cannot say, but our readers may see the model at the Polytechnic Institution, and judge for themselves. The inventor deserves credit for the idea.

ROYAL COMMISSION ON THE MANAGEMENT OF THE RIVER TYNE.—At the inquiry before the Royal Commissioners at Westminster, four eminent engineers were lately examined: all of them, though differing in opinion respecting the piers, agreed as to the general improvement of the river. Those examined were Messrs. Stephenson, Rendel, Walker, and Murray, the last being the late engineer of Sunderland harbour. Mr. Stephenson said he approved of the entire system pursued, commencing with jetties, and then making parallel walls to guide the ebb and flood tides; and considered the full tide training-wall much superior to the half tide wall in scouring power. The river has been greatly improved in every respect; and he approved of Mr. Walker's piers. Mr. Murray produced plans of the piers at the sea entrance to the south dock at Sunderland, which resemble those proposed for the Tyne. Would himself, however, propose, for the Tyne, piers differing from those recommended by Mr. Walker.

THE FRIEZE OF THE PARTHENON.—At the Royal Society of Literature on the 14th ult. Mr. Watkiss Lloyd read a paper "On the Central Group of the Panatheniac Frieze of the Parthenon." The intention of this paper was an attempt to identify the twelve seated principal figures of this group, which are marked by superior proportions, as of a superior nature, heroic or divine, to those that take part in the procession. After an exposition of the proofs by which he had satisfied himself of the correctness and significance of the names he assigned, Mr. W. Lloyd said, the more the frieze is studied the greater will be the admiration of the genius displayed upon it in plan, invention, drawing, and execution: whatever inequalities there are, appear to be due to differences in execution alone, not, as in the case of some of the metopes, to the original defect of inferior design. Some of the excellences find most room for display in the more complicated groups on the flanks of the cella,—as in the marvellous breadth, simplicity, and distinctness of forms most unsparingly combined, accomplished by the aid of resources limited to an extreme projection of relief not exceeding two inches. The succession of broad and close or narrow spaces and surfaces is so managed, that they aid and express each other as harmoniously as the quick and the tardy metrical feet in a Doric rhythm of Pindar; while the broad masses blend into the broad, and the crowded into the crowded, with a repose and sweetness, a refinement and a vigour, not surpassed in the art with which Correggio blends lights into lights and shadows into shadows. The copy of the frieze, which is placed round the exterior of the Athenæum Club in Pall-mall, affords in some respects the best opportunity of studying the art of its design, though of course the position is still too high, and has other disadvantages, as every position other than the original always must have. It was from observation of the Pall-mall copies that I first pointed out the order of the cavalcade, as following on in ranks of six or eight horsemen abreast. The broad smooth surface of each outside horse gives rest to the eye, and marks or accentuates the sequence.

CATERHAM RAILWAY.—The works of this undertaking were commenced on Monday, the 5th inst. on land belonging to Sir William Clayton, Bart. about six miles from Croydon, on the Godstone-road, the Hon. Sydney Roper Curzon performing the office of turner of the first sod, in the presence of a large concourse of visitors. This line of railway starts from the Godstone-road station of the Brighton Railway, running into the South-Eastern district along the Caterham valley. It is anticipated that by this line there will be brought to London, under the superintendence of Messrs. Jackson, of Pimlico, a good description of lime, made from the grey limestone of the district, particularly adapted, it is said, to hydraulic purposes; also building stone, well adapted, it is said, for building in London, at or about the same cost as brick. As a passenger line it is very important, not only to the immediate vicinity, but to the surrounding towns and villages, now sending their traffic by way of Edenbridge and Godstone, on the South-Eastern line. There is another circumstance connected with this company, also worth notice, viz.—the landowners on the line (so anxious are they for its construction), have conveyed to the shareholders a sufficient quantity of freehold land, for one acre to be allotted to every twenty shares. This land is in close proximity to one of the principal stations on the line, and well adapted for building purposes. It is reported that Mr. Thomas Jackson, of Pimlico, is likely to become the lessee of the line, and intends to develop the mineral riches of this district in the manner before alluded to. Large fire-stones for Scotland, and the North of England, will be attainable also.

PARGETTING.—In the article on "Clerical Economics," in the last number of the *Quarterly*, in which several hints are given for the arrangement of parsonage-houses, it is said, "Where old walls require external plastering, let it be the old-fashioned pargetting instead of rough-cast, or modern scored stucco. The recovery of old parget patterns and the invention of new is a field of architectural study hitherto most undeservedly neglected." This is worth the attention of students.

PAPER FROM WOOD SHAVINGS.—A number of an American paper called *The Albany Journal* was lately printed on paper made from basswood shavings of a peculiar form thrown off by a machine called Beardslee's planing machine. The quality is said to have been good, and even fit for the trauler of line engravings. The pulp is said to be cheaply manufactured by a simple but secret process, applicable to different kinds of wood shavings, and the expectation is, that rags will be ultimately driven out of the market altogether by this new process.

PETERBOROUGH.—A meeting of the Northampton and Lincoln Architectural Societies is announced for the 23rd and 24th of May, at Peterborough, under the patronage of the Bishop and the Dean: the second day will be devoted to an excursion to Croyland and Thorney Abbeys. The Leicestershire, Cambridge, and Bedfordshire Societies, are also expected to join.

TENDERS

For the erection of offices for the General Annuity Endowment Association, King-street, Cheapside. Mr. T. S. Cundy, architect. Quantities supplied by Mr. R. Roberts.

	In Ancaster stone.		If in Bath.
W. Cubitt and Co.	£6,850	.....	£178
Locke and Nesham	6,745	.....	175
Kelk	6,700	.....	200
Haward and Nixon	6,647	.....	124
Winsland and Holland	6,600	.....	250
I'Anson	6,495	.....	290
Haynes and Eyre	6,188	.....	300
Myers	5,729		
Lawrence (accepted)	5,499	.....	157

For two chapels, porter's lodge, dead-house, entrance gateway, boundary walls, &c. for the Portsea Parish Cemetery. Mr. G. Rake, architect.

Bramble, Portsea	£4,516	0	0
Gover (Brothers), Winchester	4,300	0	0
Backhurst and White, Landport	4,200	0	0
J. Aylen, Portsea	3,994	10	0
T. and G. Wells, Landport	3,989	0	0
G. Absalom, Portsea	3,907	0	0
L. Camwell, Portsmouth	3,720	0	0
J. Hodges, Landport	3,720	0	0
J. King, Portsea	3,710	0	0
B. Callaway, Southsea	3,605	12	0

For Newmarket drainage, delivered to the Local Board of Health. Quantities furnished, and sold at 3*l.* per copy. Forty-five items.

The highest	£3,700	0	0
(Some intervening not known).			
J. Read, Cambridge	3,000	0	0
S. Clark, Newmarket	2,345	0	0
R. Oakes, Swaffham	2,298	15	0
A. Campbell, Hackney	1,915	5	0

(We have received some curious particulars of previous proceedings.)

For Arkesden Church, Essex. Mr. G. E. Pritchett, architect.

	Contract, exclusive of carpenters' work.		Ditto, but with Westmoreland slates to nave roof.		Contract for carpenters' work.		Ditto, with oak sittings, add.		Contract for porch.	
	£.	s.	£.	s.	£.	s.	£.	s.	£.	s.
Brown	1,150	0	1,225	0	698	0	138	0	60	0
Stephens	998	0	1,038	0	280	0	25	0	25	0
Case	977	17	1,017	0	270	0	27	0	27	0
Padbury	959	0	969	0	310	0	34	0	30	0
Bell	930	0	968	0	470	0	95	0	...	
Glasscock	902	0	934	0	518	10	22	10	42	12
Erswell (accepted)	853	0	878	0	491	0	18	0	33	0

TO CORRESPONDENTS.

"P. and N."—"H. D."—"Mr. P."—"G. E. P."—"H. F. H."—"Mr. O."—"W. F."—"Manchester" (write to Honorary Secretary of Institute, Lower Grosvenor-street, for prin ed particulars)—"C. G."—"W. S."—"J. S."—"J. W. P."—"L. and F."—"Mr. H." (thanks; we are unable to send)—"G. S."—"E. A."—"S. H." (thanks)—"D."—"E. L. W."—"J. B. B."—"J. D."—"W. M."—"T. and T."—"J. W."—"H. T." (we cannot advise: it must depend on position and means)—"H."—"P."—"J. G. J."—"C. S."—"R. B. H."—"C. C."—"E. P." (apply to a competent architect)—"Δ."

"*Books and Addresses.*"—We are forced to decline pointing out books or finding addresses.